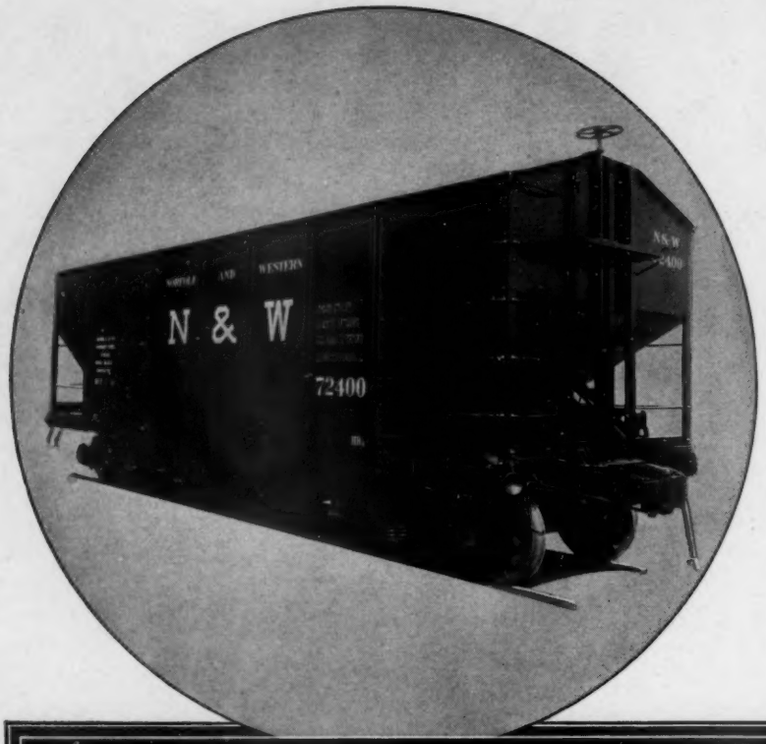
APRIL 6, 1935

Railway Age

FOUNDED IN 1856



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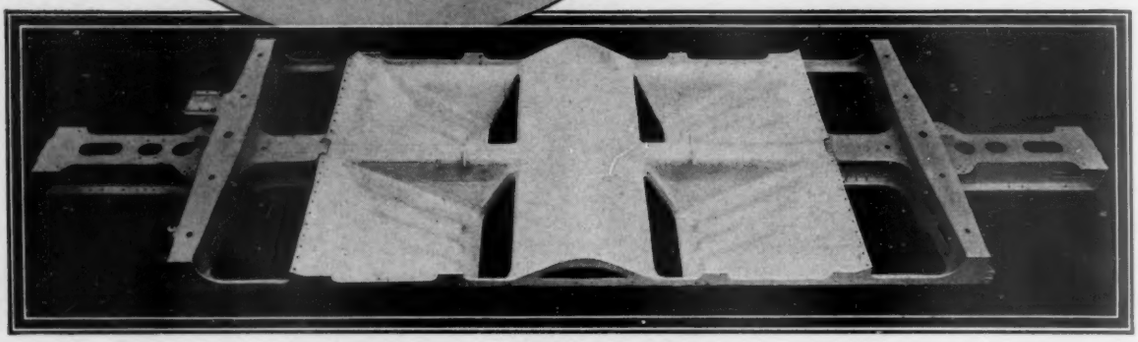

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In This Issue

The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service

RAILWAY AGE

Recovery Awaits Constructive Policies

Almost a year ago—on April 26, 1934—the railways agreed to rescind, in installments on July 1, 1934, and January 1 and April 1, 1935, the deduction of 10 per cent from basic wages put into effect in February, 1932. The completion of this program by the restoration of the last 5 per cent on April 1 makes the average hourly wage of all but officers once more the highest in history. The average hourly wage in 1914 was about 25 cents; in 1929, 66.6 cents, and in 1931, 68.9 cents. It is now, therefore, almost 175 per cent higher than before the war, and about 3½ per cent higher than in the last year before the depression.

The railways agreed to restore pre-depression wages because of both hope and fear. They hoped for continuance of the improvement in business which apparently had been occurring during the last quarter of 1933 and the first quarter of 1934. They feared refusal to agree to restore wages would result in strikes, or threats of strikes, which might bankrupt many of them, and even precipitate government control. Review of what has occurred during the subsequent year makes a very unsatisfactory story.

Wage Advances—No Improvement in Business

General business, and consequently traffic, have fluctuated, but there has been no improvement. Car loadings in the twelve months ended on April 1, 1934, were 30,516,405 and in the twelve months ended on April 1, 1935, were approximately 30,741,000, or virtually the same. The latest statistics of railway earnings and operating expenses available are for January, 1935. In the ten months, April, 1933, to January, 1934, inclusive, gross earnings were $2,698,219,227, and in the ten months, April, 1934, to January, 1935, inclusive, were $2,736,040,307, an increase of $38,000,000. Operating expenses in the ten months ending with January, 1934, were $1,917,833,273, and in the ten months ending with January, 1935, were $2,061,052,051, an increase of $143,000,000 due almost entirely to advances in prices and wages. Net operating income in the ten months ending with January, 1934, was $471,391,256 and in the ten months ending with January, 1935, was $371,807,736, a decline of $99,500,000.

The statistics of earnings, expenses and net operating income for the twelve months ended April 1, 1935, will make a worse comparison, because car loadings in the first quarter of 1935 were slightly smaller than in the first quarter of 1934, while operating expenses, especially owing to advances in wages, further and substantially increased. In January, when gross earnings were about $6,000,000 larger than in 1934, operating expenses were about $17,000,000 larger, and net operating income declined almost $9,600,000.

Railway Problem Neglected—Employment Declines

Reductions in railway employment followed the advances in wages made on July 1, 1934, and January 1, 1935. In June, 1934, the number of employees was 1,070,837, or 98,024 more than in June, 1933. It began to decline in July, became in October less than in 1933, and in the six months ending with February, 1935, averaged about 12,000 less than in the six months ending with February, 1934. The total pay roll is, in the long run, determined by gross earnings. The advances in wages prior to April 1 reduced employment because there was no increase in gross earnings sufficient to pay higher wages to the number of persons previously employed. The final advance of 5 per cent in wages made on April 1 is at the rate of $80,000,000 annually, while the emergency advance in freight rates authorized last week by the Interstate Commerce Commission is estimated at $85,000,000 annually. Therefore, after the advances in both wages and rates are in effect, the relation between gross earnings and operating expenses will be no better than in the first quarter of 1935, and will necessitate retrenchment either in employment or in wages.

The railroad situation with which the nation is confronted is actually the worst since the early part of

1932, and it is so bad because the administration and Congress for two years have done little to help recovery and much to prevent it. The railroads imperatively need two things to enable them to meet present operating costs. They need a revival of general business, without which there can be no adequate increase in their traffic and gross earnings. They need fair treatment as respects competition in transportation. The railroad problem is one of the vital problems of recovery. There can be no full revival of business in general without a solution of the transportation problem. There can be no solution of the railroad problem without a revival of general business. What has been occurring in Washington throughout the three months since Congress met shows why no progress whatever toward recovery has been made during the last year.

Transportation and Durable Goods Industries

It is as true as it was a year ago that the most depressed industries, and those in which most unemployment exists, are the durable goods and service industries; and the only way effectively to attack the depression is with measures to revive business and employment in these industries. At its last session Congress passed one measure attacking the durable goods industries problem—viz., the National Housing Act, which has the purpose of reviving home modernization and building, and which has caused an increase of private expenditure and investment in the home building field. But one swallow does not make a summer. There can be no adequate revival of general business without a revival of all important durable goods industries caused by increased buying from them by other industries. The transportation industry is the largest customer of the capital goods industries. The railroads are much the largest branch of the transportation industry. The ability of the railroads and other carriers to buy from the capital goods industries depends mainly upon their net earnings. Owing to government policies of subsidizing and not regulating the competitors of the railways, the transportation industry has become greatly over-expanded and its net earnings and buying power have been impaired much more than they would have been by the depression alone.

Real Recovery Problems Neglected

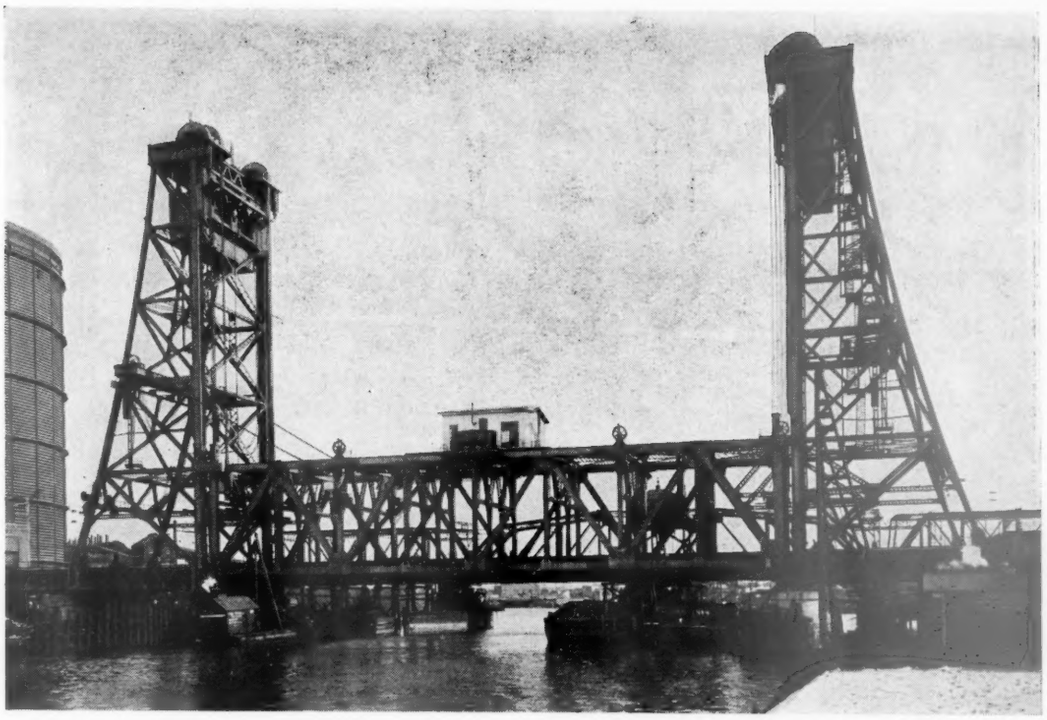
Legislation drafted by Co-ordinator of Transportation Eastman intended partially to equalize terms of competition in transportation has been introduced in Congress and hearings regarding it have been held. It would tend to substitute order for chaos and to increase the net earnings and buying power, not only of the railroads, but of other carriers. It has been understood since long before Congress convened that President Roosevelt would send a special message urging the passage of such legislation and would otherwise give it the backing of the administration, but recent reports from Washington regarding its prospects are discouraging. The attention of public men is being given to measures the passage of which will contribute little or nothing toward recovery. The work relief legislation, like the public works legislation passed in 1933, will give employment, but the employment will be directly or indirectly by government, and, like previous legislation of the same kind in this and other countries, it will tend more to prevent than to increase employment in private industry, where alone it can be the cause and effect of real recovery. The veteran's bonus legislation will have similar results. Legislation for social security may be desirable to forestall or prevent the effects of the next depression, but to whatever extent it increases business expenses in the near future it will tend to prolong the present depression.

Railway Wages Must Be Reduced

The only persons who really are doing anything to terminate the present depression are the 40,000,000 now gainfully employed in agriculture, industry and commerce. Their natural and necessary leaders in this work are the owners and managers of private capital. As managers of one of the greatest and most depressed industries, it is the duty of railway executives to face both political and economic facts, and to adopt the policies required to enable the railways to pass safely through the financial crisis with which they are confronted.

The failure of general business and railway earnings to improve during the last year, and continued failure of the administration and Congress to do anything substantial to help solve the railroad problem, will make it necessary for railway executives to take action again in the near future regarding wages and working conditions. The restoration of the 10 per cent deduction in basic wages just completed, if continued in effect for a year, would cost about $160,000,000. Even with only a small part of the restoration of wages in effect, railway operating expenses in 1934 were $143,000,000 more, and net operating income almost $100,000,000 less, than in 1933. There is clearly no reason why the railways should continue to pay the highest wages in history when their gross earnings are little more than one-half as large as in 1929, when their net operating income is only about one-fourth as much as it was then, and when the inevitable effects would be bankruptcy for most roads, increased unemployment of railroad men and greatly curtailed railroad buying and increased unemployment in the capital goods industries.

The paltering with the transportation problem in Washington is but one of many illustrations of the prevailing tendency of public men to evade or disregard the problems that must be solved to promote economic recovery. Railroad men, employed and unemployed, can thank those who have dallied with "reform" and politics, and evaded the nation's real recovery problems, for the fact that it will be necessary for railway managements to take steps immediately for another reduction of wages.



The Pennsylvania's New Vertical-Lift Bridge Over the Passaic River at Newark, N. J., Involves the Longest Three-Track Lift Span in Existence

Three-Track Vertical-Lift Bridge Has Unusual Features

Structure built in connection with extensive passenger station improvements of the Pennsylvania at Newark, N. J., suspends center track and provides for fool-proof operation*

ON March 24, in connection with the extensive passenger station improvements which it is making at Newark, N. J., the Pennsylvania placed in service over the Passaic river a new three-track lift bridge, which involves the longest three-track lift span of its type that has been built, and the fourth heaviest in either highway or railway service. The new bridge, which is one of three vertical-lift bridges to be constructed over the river at Newark, the others to carry one and two tracks, respectively, follows conventional vertical lift bridge design in many respects, but incorporates a number of unusual features, both structurally and from the standpoint of operation.

The new three-track bridge is located on the alinement of three new tracks serving the new passenger station, and approximately 120 ft. north of an old two-track swing bridge, built in 1899, which it replaces. It consists essentially of two tower spans, each 65 ft. long, and the lift span, which is 230 ft. long, center to center of bearings, and it provides minimum under-clearance of 24 ft. above mean high water, and a clear channel width of 200 ft. The vertical travel of the lift span is 111 ft., which provides a full opening of 135 ft. above mean high water.

The bridge rests on four concrete masonry piers, three of which were put down in pneumatic caissons to a maximum depth of 92 ft. below mean high water. The other pier, carrying the rear of the east tower span, is supported on piles. The caissons employed in the construction of the two main tower piers were 87 ft. long, 36 ft. wide, and 14 ft. high.

The most unusual feature of the caisson piers, which are seated on a substantial sand and clay formation, is the fact that, to further distribute the load, their bases were belled out six feet on all sides after the cutting edge had come to rest. In the case of Pier 1E, supporting the east end of the lift span, this was done by first driving timbers out from the cutting edge at an angle of 45 deg., and then excavating beneath. The timbers used were 5 in. by 10 in., by 9 ft. 6 in. long, and were spaced on centers of 5 to 24 in., depending upon conditions. Because of some difficulty experienced in keeping these timbers from sagging under the great superimposed load, this method of construction was changed in belling out the base of Pier 1W, at the opposite end of the lift span, to one employing 4-in. H-beams, 10 ft. 6 in. long, driven on 36-in. centers and

* This is the second of two articles dealing with the Newark improvements of the Pennsylvania, the first of which, describing the new passenger station and its related facilities, appeared in the issue of March 30.

The Bridge Is Remotely Controlled From the Top of the New Interlocking Tower Immediately East of the River

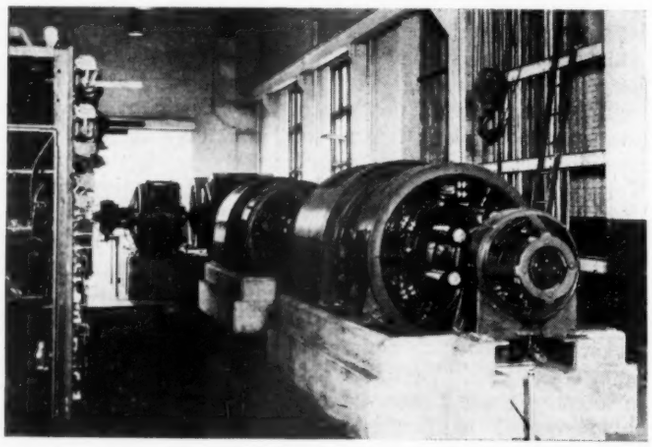
breasted up with 3-in. timber plank placed either between the beam flanges or back of the beams. This expedient proved highly effective. In the case of both piers, air was carried at 37 to 42 lb. pressure.

Another interesting feature in connection with the piers is the fact that, to reduce their weight and effect economy in concrete, two large pockets, side by side, were provided transversely through the center of the body of each pier. These pockets, each 16 ft. wide, extended from Elevation—9 to within 22 ft. of the bottom of the foundation.

Features of the Tower Spans

The new bridge, which has square ends in spite of the fact that the railroad crossing of the river is at a skew of 87 deg. with the center line of the channel, is designed for Pennsylvania standard loading. In this connection, it is interesting to note that, in view of the fact that the bridge will, within a short time, be used exclusively by the road's electric passenger locomotives, the impact factor used in design was considerably lower than used for steam locomotives. This was possible because of the absence in the electric locomotives of the hammer blow effect transmitted by steam locomotives.

Silicon steel was used in practically all of the main members of the lift span, both trusses and floor system, while plain carbon steel was employed in the towers, except in the deck construction, where copper-bearing steel was used to minimize corrosion. A basic unit stress of 16,000 lb. per sq. in. was used for the carbon and copper-bearing steel, and 22,500 lb. per sq. in. for the silicon steel.



The Power Floor of the New Interlocking and Bridge Control Tower—The Two Bridge Operating Motor-Generators Are Shown in the Foreground

The tower spans, 65 ft. long through their longitudinal center line, are supported directly on the river piers, and rise to a height of 210 ft. above mean high water at the sheave bearings, or approximately 180 ft. above the track level. Deep lattice struts connect the tower legs at the base on each side, and the steel floor system supports a reinforced concrete deck, which, for a distance of 21 ft. back from the end of the lift span, gives direct support to the track ties without ballast. Beyond this point on each tower span, the track is stone-ballasted.

Center Track is Suspended

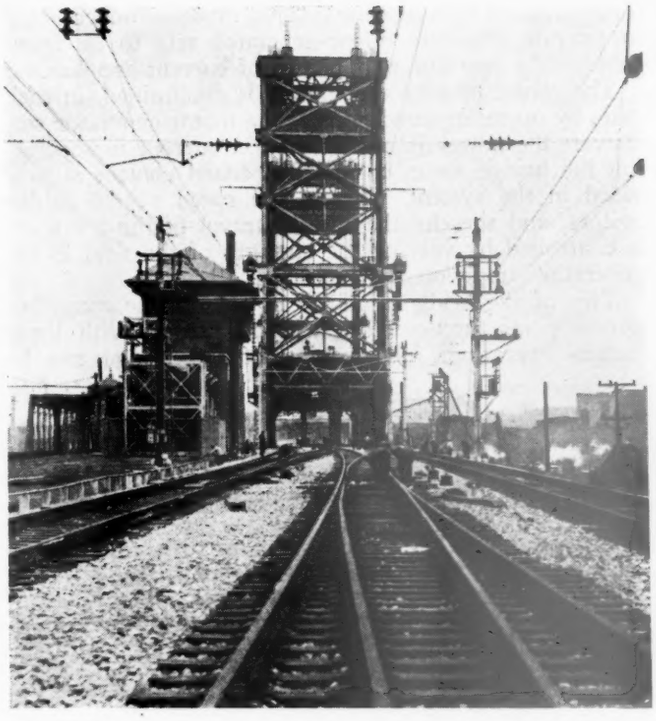
The lift span is made up of two riveted subdivided Warren trusses with parallel chords and with vertical hanger members at each end. The depth of the trusses is 44 ft., center to center of chords, and they are spaced 54 ft. apart to provide for the three tracks on 17 ft. centers. The most unusual feature of the lift span is the fact that the center track is suspended by means of built-up I-section hangers extending down from three-panel transverse Warren trusses, 17 ft. 6 in. deep, at the different panel points of the main trusses. This arrangement, which provides 21 ft. vertical clearance above the top of rail, permitted the use of continuous floor beams supported at their third points by the hanger members, and thereby materially reduced the depth of floor system that would have been necessary otherwise. This was particularly desirable on the bridge since the track grades were fixed by controlling factors on each side, and it was to the advantage of both the railroad and river shipping to maintain as great a clearance beneath the bridge as possible. The resulting floor system, wherein the ties rest directly on the steel, together with a lattice truss type bottom lateral system found particularly adapted in the case of this bridge, has a depth of only five feet from top of rail to under-clearance.

A total of sixty-four 2⅜-in. cables support the lift span, eight over each of eight sheaves, 15 ft. in diameter, at the tops of the towers. These sheaves are grouped in pairs on each side of the towers, slightly staggered to permit closer spacing, and thus provide 16 cables for each corner of the span. The only unusual feature of the counterweights is the fact that, to minimize their bulk, magnetite sand, which weighs approximately 30

lb. per cu. ft. more than ordinary silica sand, was used in a portion of their construction.

The equalizing arrangement on the bridge for compensating for the shifting weight of the main cables is similar to that employed on other Pennsylvania vertical lift bridges constructed in the East and consists of four auxiliary counterweights, one on each side of the towers, which are suspended over sheaves mounted on the sides of the towers at a height corresponding to the mid-height of upward travel of the upper chords of the lift span trusses. From these sheaves the cables extend to the upper chords of the lift span trusses at their quarter points. Through this arrangement, the auxiliary counterweights exert a lifting vertical component on the span when it is at a position less than half of its full opening, and a downward vertical component on the span when it is raised above the mid-height of its full opening. It is thought that this arrangement has a number of advantages over that employing a rocker bent on top of the lift span.

Among the structural features of the bridge, several are unusual and of special interest, including the arrangement of stairs and walkways so that ready access is had to all moving parts, bearings and machinery, and the fact that, to eliminate fire hazard, all walkways, including those on the deck of the lift span between and outside the tracks, are constructed of subway grating. Still another feature is the fact that the tower stairs are located within the towers, instead of on the sides, and have been given a uniform slope throughout.

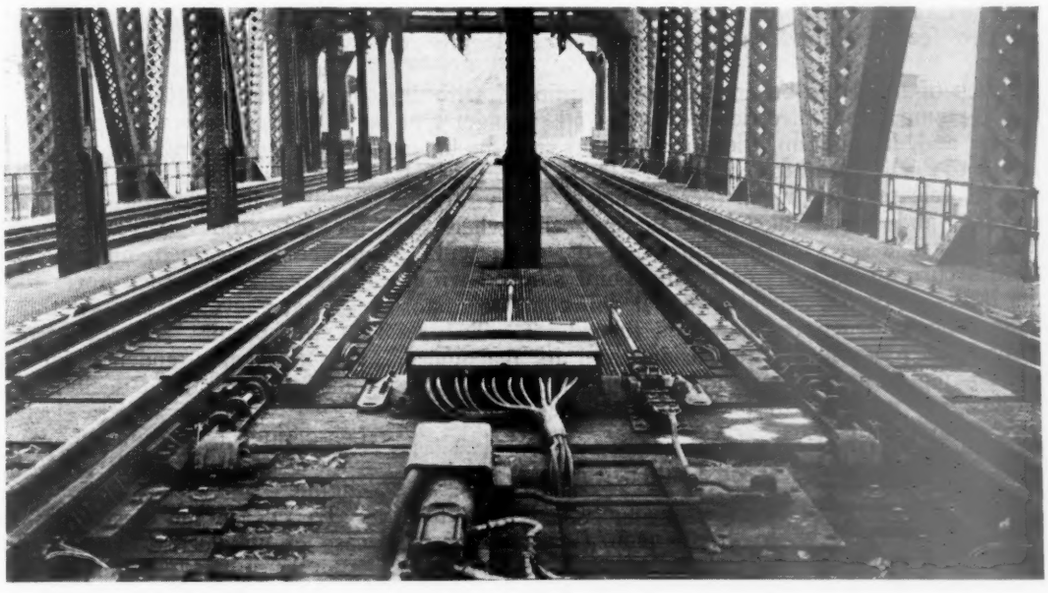


The East Approach to the New Bridge, Showing the New Interlocking and Bridge Control Tower at the Left and Also a Part of the Old Swing Bridge Crossing of the River

New Features in Operating Equipment

Some of the most interesting features of the bridge have to do with the arrangement whereby its operation is controlled remotely, entirely off the structure, and the measures that were taken to prevent any possibility of its causing delays in train service. Operation of the bridge is controlled in a combined bridge control and signal interlocking tower immediately east of the river, a three-story brick structure. Here, the bridge power converting equipment is located on the ground floor level, 123 ft. 8 in. long by 25 ft. wide, while the bridge controls are located at the west end of the third floor, 71 ft. 4 in. long by 25 ft. wide, which floor also houses the signal interlocking facilities. The only operating equipment on the bridge includes the driving motors with their brakes and an auxiliary gasoline engine emergency driving unit, which are located in a machinery house, 30 ft. by 34 ft., on top of the center of the lift span.

The bridge electrical operating equipment consists essentially of three 260-hp., 550-volt, d.c., mill-type bridge motors on the span, which are fed from either of two motor-generator sets, one a standby unit, located in the operating tower. These units have available for use four independent sources of power, two single-phase and two three-phase; all from railroad company substations supplying electric traction current. This power, at 11,000 volts, is brought to a transformer station outside the tower, where it is reduced to 2300 volts and then fed to the motor-generators. A special feature of these motor-generator sets is the fact that the motors are capable of operating on either the single-phase or the

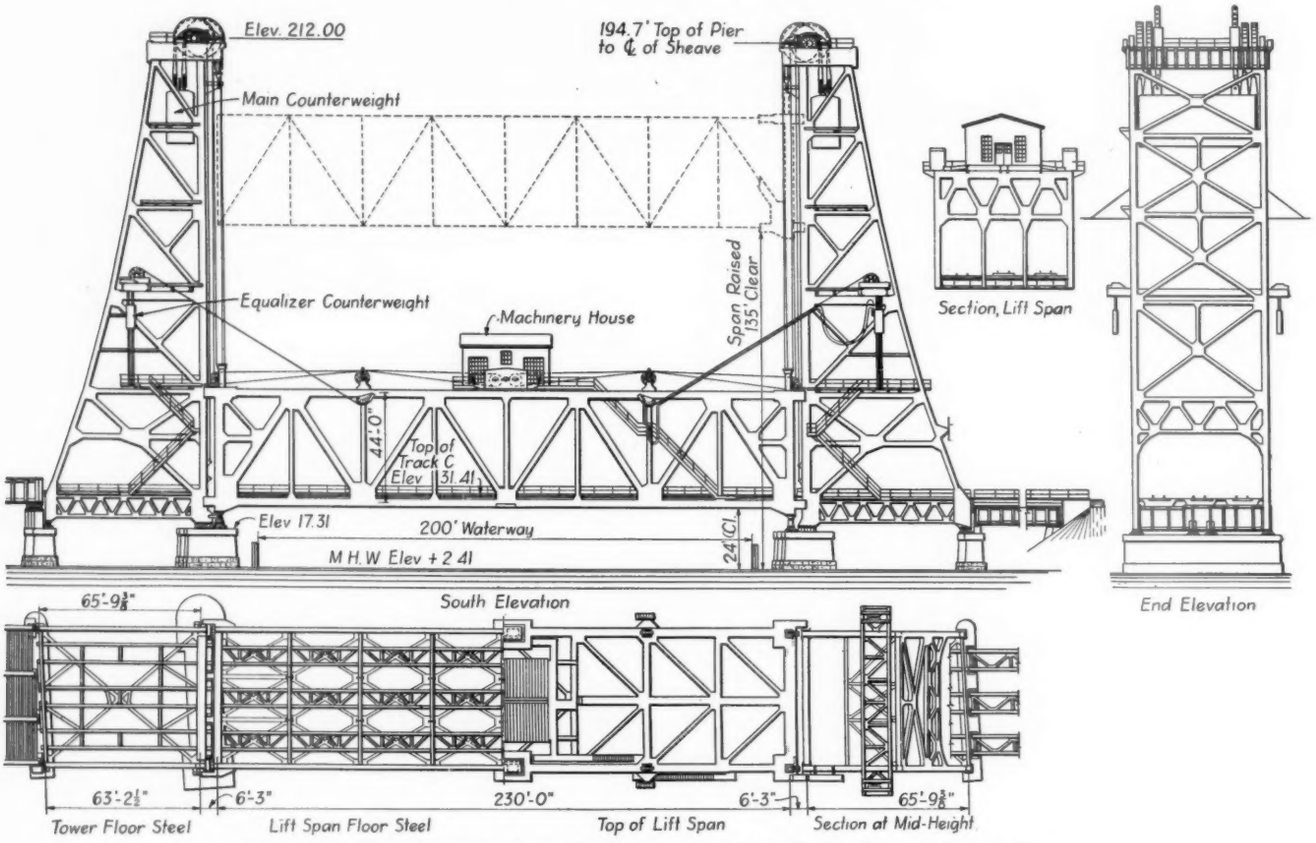


Looking Over the Deck of the Lift Span—Note the Hanger Members Supporting the Center Track, and the Use Made of Subway Grating for Walkways

three-phase power supplies. This made it unnecessary to provide duplicate motor-generator sets to be operated on the two different phases of current supplies.

The choice of source of power is determined, in each case, by operating conditions. The motor-generator sets convert the power into 550-volt d.c. current for operating the bridge motors. Ward-Leonard control is provided in the system, wherein the speed of the bridge motors, and thereby the rate of travel of the lift span, is controlled by varying the strength of the field in the generator supplying the motors.

Two of the bridge motors can operate the span, but normally all three motors will be used. With three motors operating, full opening of the bridge can be attained in 85 sec., which involves a maximum speed of two feet a second throughout the main length of travel.



Plan, Elevation and Cross Sections of the New Vertical-Lift Bridge Over the Passaic River

Each of the three bridge motors is equipped with an 1,800-pound foot, electrically-driven, oil plunger-type brake, and, in addition, there is a similar floor-mounted brake of 2,800 pound foot capacity. These brakes, which can be released only when there is power on the bridge motors, and which take hold automatically when the motors are de-generized, insure that the span will be held secure on its seats or at any point stopped within its limits of travel, and also that it will come to a stop automatically when the power is turned off. To prevent sudden shocks to the bridge and its machinery, which might result from sudden stops of the span, the brakes are adjusted to take hold in succession rather than simultaneously.

Span Travel and Speed Limited Automatically

The movement of the span is controlled by a five-point controller, and, to guard against overrun of the span when being raised, and the possibility of shock in seating, its travel is governed by a limit switch on the east tower. From a position of rest on its shoes, the span can be raised at full speed until it reaches Elevation 118. Here it slows down automatically to first-point speed. At Elevation 125, a warning light flashes on the bridge operator's desk, and at Elevation 126, the span stops automatically. If the operator then returns his controller to neutral, he can regain his power, and, by pressing a release button, can continue to raise the span at first, second or third-point speed, up to Elevation 134, where the span comes in contact with air buffers at the tops of the towers. At Elevation 135, power is cut off automatically and the brakes are applied. At Elevation 136 ft. 3 in., an additional safety switch is provided, which is tripped by one of the counterweights in the event of the failure of the main limit switch. The maximum limit of travel is 137 ft. 5 in., which provides for an overrun of 2½ ft.

On the downward movement, the span can be lowered at full speed to Elevation 41, where it slows down automatically to first-point speed. At Elevation 33, a warning light lights on the control desk, and at Elevation 32, the span stops. By returning the controller to neutral, power is regained, and, by pressing a seating button, the operator can then lower the span at low speed to its seats at Elevation 24. At this point, the power remains on the motors for six seconds after seating, which eliminates any tendency for the span to rebound. It then cuts out automatically.

In case of a complete electrical failure, the span can be operated by the mechanical driving unit on the span, which is an 8-cylinder, 260-hp., marine-type gasoline engine.

To release the electrically-operated motor brakes in case of an electric power failure, a specially designed

(*Continued on page 541*)

Locomotives, Cars and Public Relations

Railway Age editorial stimulates an unusually large number of pertinent reactions

IN the *Railway Age* of March 9, 1935, appeared an editorial, Locomotives, Cars and Public Relations, stressing the importance of the railroads using a reasonable degree of showmanship in bringing their car and locomotive equipment and other facilities to the attention of the public, which has brought forth an unusual number of comments from our readers. In spite of the newer forms of transportation, many people outside of railway service are keenly interested in the railroads and their equipment. Beyond this, however, an unknown, but undoubtedly large dormant interest, awaits only a challenge on the part of the railroads to bring it to life, and thus secure a larger degree of intelligent co-operation in the fight the railroads are making to get a square deal in competing with other forms of transportation. Of special interest, also, is the fact that some of these letters quite clearly indicate that such an interest may be converted into increased business for the railroads, even under present competitive conditions.

Following are some of the high spots in this correspondence:

Insists on Buying Goods Shipped by Rail

A correspondent in Maplewood, N. J., says:

"The writer might be considered a 'hobbyist,' having been interested in, and fascinated by railroad operation in all its forms since childhood. Inculcated in this interest is a very healthy desire to see the railroads live and prosper and a feeling amounting to personal resentment at seeing their revenues depleted and even many of their lines abandoned as the result of an invasion by other less dependable forms of transportation which are not even self-supporting—and to add insult to injury, even derive advantages to the tune of millions of dollars from the taxes which the railroads are compelled to pay.

"I am not going to add myself to the endless list of individuals who see fit to criticize the railway systems, but I do think that they would be greatly benefited, both in publicity and revenue, if they would give some recognition in the form of encouraging the inspection of their facilities and rolling stock to these hobbyists, most of whom are not railroad employees, for which reason their opinions and views would not be considered as biased as those of actual employees. *I, for one, let my interest go to the extent that I buy my milk from a company which ships it on the railroad, where it belongs, which practice also applies to the coal I purchase —and for which I pay several dollars more a ton— rather than patronize a bootleg trucker.* Of course, I am a very small consumer, but if a large number of the public were recognized and encouraged, the benefits, both direct and indirect, would be great. One of the causes for the great success of the motor car is advertising where it does the most good—and the railroads should take this to heart."

Thousands of Railroad Model Makers

A. C. Kalmbach, editor of The Model Railroader, published at Milwaukee, Wis., draws attention to the large number of clubs of railroad model makers and indicates their enthusiasm in supporting the railroads. Unfortunately, it appears that these men are not always dealt with very courteously. Mr. Kalmbach says:

"From my experience in the model railroad field I know that the railroads are not overdoing themselves to be courteous and helpful to this particular class of railroad enthusiasts, and yet they are receiving a valuable and genuinely enthusiastic backing.

"Our magazine has a paid circulation of 3,000 among those who model railroad equipment, and we estimate that there are at least 7,000 more engaged in the hobby to a considerable extent. There are between 50 and 75 clubs of model railroaders, one in almost every large city of the country, working not only for helping each other in the actual work of building models, but toward preserving and helping the very railroads they model. These men are from every walk of life, but more often than not they are men of influence, for they are the ones who have the time and money to spend on the hobby.

"For instance, the majority of our subscriptions come on the engraved letterheads of big corporations, potential shippers for the railroads, if they aren't already. The hobby is growing by leaps and bounds, and every new convert to model railroading, presto quick, becomes a regular user of railroad service whenever he possibly can. *I know of any number of Milwaukee model railroad fans who used to drive to Chicago, who now take the train as a matter of course, and others who mark their purchase orders, 'Ship by Train.'*

"From personal experience I know that some railroad managements are glad to help out the model makers with prints and other courtesies, but other roads turn down all requests of any kind gruffly and almost discourteously. If the roads can be brought to realize the true value of this publicity they are getting, they will certainly be more than glad to co-operate in any way possible."

Wants to Take Locomotive Pictures

A student at the Fieldston School, New York, has had a bit of hard luck in trying to take photographs of locomotives for his collection, and for interchange through an international club. He asks the editor for advice as to how to proceed.

"My hobby is railroad locomotives. I take photographs of lines in this part of the country and trade them with boys in other parts, some as far away as California. We get in touch with each other through the International Engine Picture Club.

"In taking my pictures I have had a great deal of trouble with railroad police, who say it is against company rules to take photographs, and order me off the railroad property.

"I tried writing to the railroad officials for permission to take pictures. I wrote to the superintendents of motive power of both the ——— and the ——— railroads and received no answer from them. By applying at the chief engineer's office of one of the local railroads I secured a one day pass, permitting me to use my camera around the terminal.

"I was very happy to have found that you were interested in this problem and I would appreciate any-

thing you can do to help me."—*Marcus D. Beck, 315 West 106th Street, New York.*

Ed Hungerford on Railroad Museums

In light of the prominent part that Edward Hungerford has played in assisting the railroads to dramatize their history and facilities, it is not surprising that one of the first letters we received after the publication of the editorial came from him. He writes:

"The editorial interests me very much as it goes along lines that I have myself tried to promote for a long time past. Your references to The Fair of the Iron Horse at Baltimore and Wings of a Century at Chicago, both of which happened to be my creations, were most gratifying and appreciated.

"One of the great troubles with the American railroad situation today, as I see it, is the lack of proper appreciation on the part of so many of the executives of the great 'fan' interest on the part of laymen the whole country over. This vast potential of very great aid to the railroads has been almost utterly neglected. In England it is carefully cultivated and promoted and a real rail literature is stimulated at all times by the roads themselves. All to their very large benefit.

"There is no question in my mind whatsoever as to the existence of this layman interest here in the United States. I experienced it personally in our transportation shows at Baltimore and at Chicago, and was touched more than once by its depth and sincerity, as well as by its power. The most of the time that this interest comes up against the rail executives it is either over-ridden or pretty thoroughly discouraged by them. The roads address their appeals almost exclusively to the shipper or the investor. The laymen of whom I speak may not be in either of these classes, but they are most loyal friends of the roads and if given the slightest encouragement will support them, politically and otherwise, to the uttermost.

"A case in point: Some 12 or 15 years ago a group of loyal railroad fans in and about Boston, founded, against great odds, the Railway and Locomotive Historical Society, which has grown from that day to this and has received a permanent location in the Baker School at Harvard University. The men that founded this organization were possessed of very modest means; many of them were actual railroad workers out on the line, and for a long time they received scant sympathy and support from the railroads themselves. Nevertheless, they persisted and the collection which they have now established in the Baker Library at Harvard is without peer or equal elsewhere in America, and it is not surpassed by many places overseas.

"The membership dues are extremely low—three dollars a year—and the bulletins which the society produces are the best modern record of American railroad history that has yet been established. This society grows slowly but steadily. An off-shoot of it recently is a New York Chapter, which is working along the same lines as the parent society in Boston, and also with increasing growth and success.

"Railroad museums are beginning to spring up here and there and everywhere across the country—notably at the University of Michigan and also, incidentally, in connection with the new industrial museums in New York, Philadelphia and Chicago. The magnificent collection made by the Baltimore & Ohio for its Fair of the Iron Horse in 1927 is practically intact and may yet become the nucleus of a splendid national railroad historical collection.

"This is just the beginning. Other opportunities for the development of this laymen interest in the railroad are almost untold. It is not too late, even now, for the roads to begin to cultivate this. If they have the real desire, the methods are not difficult to find."

Even School Girls Are Interested

C. L. Meister, mechanical engineer of the Atlantic Coast Line Railroad, draws attention to the fact that even school girls are interested in locomotives. His letter, which follows, was accompanied by carbon copies of letters that he had written to two of these young ladies and one of which is reproduced following his letter.

"The Atlantic Coast Line has recently had some requests for information on the first steam engine and early forms of transportation and I enclose herewith copies of the reply sent to these two school girls, each of them writing to widely separated points for their information.

"In the letter to Miss Annie Jones, I had the opportunity of connecting members of the present supervisory officers of the Atlantic Coast Line with the inventor, George Stephenson, and with one of the passengers who rode on the first train, and also had an occasion (in another letter) to recount a little incident showing that the 'safety first' movement was as old as railroading itself."

Miss Annie Jones, Emporia, Va.:

Your letter addressed to the New York office of the Atlantic Coast Line was referred to our Richmond office, because Richmond is in the same state as Emporia. Our Richmond office sent it to Robert Scott, editor, Atlantic Coast Line News, Wilmington, N. C., because Wilmington is the headquarters of the great Atlantic Coast Line Railroad, which had its beginning in Virginia. Mr. Scott asked me to write you knowing that I have been working on and thinking about steam locomotives for the last 37 or 38 years.

You asked for information on the first steam locomotive and I am sending you a photostat copy showing the first successfully operated steam locomotive in the world invented by Mr. George Stephenson, which operated between Stockton and Darlington, England. You will see that when this locomotive was tried out September 27, 1825, it hauled six wagons loaded with coal and flour, a covered coach containing the directors and their friends, and 21 coal wagons filled with passengers.

Now I am going to tell you something that not many people know about. When I was a little boy living in Brooklyn, N. Y., my Grandmother, Mary Mort, used to tell me about happenings in England when she was a little girl and she was proud to tell about taking a ride in the first train hauled by a locomotive in England, she being a friend and neighbor to George Stephenson. You might also like to know that a direct descendant of George Stephenson is W. C. Stephenson, now master mechanic of our large locomotive repair shops at Tampa, Fla. Another descendant of that great inventor is James Stephenson, our valuation engineer here at Wilmington, N. C.

I do not have the time to tell you how the first steam engine was improved, but I am sending you with the photostat a little booklet telling you the story of the Atlantic Coast Line, how it started from a small road running from Petersburg, Va., through Emporia to Weldon, N. C. This Petersburg Railroad was completed in 1833, only eight years after Stephenson's railroad was started, and this booklet, together with another one entitled, "It Doesn't Just Happen" tells lots of interesting things about transportation, which I am sure you and the other boys and girls of your class will find of interest.

New Haven Encourages Visitors

J. F. Doolan, superintendent of the New York, New Haven & Hartford, outlines the extent to which that railroad encourages groups to visit its various facilities.

"For many years we have co-operated to the fullest possible extent with groups, both large and small, who were sufficiently interested in the railroad industry to ask for the opportunity to inspect our railroad plant, equipment and operations, particularly in the New Haven Terminal, which includes the Cedar Hill classification yards with modern car retarder equipment on

both the eastbound and westbound humps, locomotive facilities for steam and electric operation, etc.

"We have had thousands of visitors in groups from Chambers of Commerce, Rotary, Kiwanis, Lions, Civitan, Exchange Clubs, industrial traffic clubs from the principal sections of Connecticut, members of the departments of transportation of Yale and Harvard Universities, State Normal School, grade schools, private schools, Camp Fire Girls, Hi-Y boys and railroad employees from other parts of the railroad, who were in New Haven for system safety meetings, etc.

"Many groups consisting of teachers and children in the lower grades in school have visited the railroad station where electric and steam locomotives, the various types of passenger and freight equipment were made available for their inspection. We realize that those young minds could not absorb the mechanical details, but we tried to plant a seed that might grow into something of advantage to the railroad in future years.

"The reactions to these efforts of ours have been very favorable. The visitors are impressed with the extent, complexity, but nevertheless orderly routine of railroad work, which is considered hazardous to those outside the industry. I believe that in addition to these efforts, railroad employees and officials should accept every opportunity to appear before groups, whether large or small, important or otherwise, when invited to talk about railroad operation or problems.

"It has been my own experience that there are many misconceptions and misunderstandings that may be cleared up and the value of the railroads in building up this country and in assisting the return of the prosperity, for which America has in the past been known throughout the world, convincingly shown to such groups. This we are now doing and will continue to do."

Railway and Locomotive Historical Society

Mr. Hungerford, in his communication, referred to the Railway and Locomotive Historical Society. Recently a New York Chapter of this organization has been formed. One of its officers, T. T. Taber, chairman, has something to say about this organization and its activities. He points out, also, the indifference of some of the railroads to encourage an organization of this kind, or even to preserve their own historical documents.

"There are today, in this country, thousands of men and boys who have a more or less active, or latent interest in various phases of railroad operation or development. Each man is a potential patron, and exerts a certain amount of influence over one or more people. There are thousands of railroad securities owners, who have never been invited to even ride over the property, much less inspect the operations of the carrier in which they have invested their money.

"If transportation was recognized by the railroad officials as a commodity which had to be sold to the purchasers of it, they would pay more attention to working up every bit of favorable publicity and interest which could be aroused. The air lines do not overlook any opportunities to enlist public interest, nor do the bus lines. The railroads should realize that the owner of a private car who has been almost driven off the highways by trucks and buses, is a potential source of revenue, provided they encourage him, and offer him their services at a price he can afford to pay.

"This Society was founded in 1921 by a group of men in Boston who were interested in the gathering together of historical railroad material. Today its active membership, scattered all over the country, is about 400, and steadily growing, with practically no support, except in a few isolated instances, from the railroads it is benefiting through showing the public the development made by the railroads during the last hundred years. Gradually, for the most part through the untiring efforts of the members, there has been built up a wonderful museum collection of railroad memorabilia, which is visited by hundreds of people each year, although its existence is known by comparatively few people, and Boston is not exactly the center of the United States.

"At the present time, members of this organization have formed a Chapter in New York, which is recruiting new members steadily, although no offer of help or the slightest interest has come from the railroads in that area. *It seems an anomaly that men not connected with railroads should have them as a hobby, and be working for a better understanding between the public and the railroads, when the carriers do not seem interested!* It is sort of a case of being unable to see the forest because of the trees!

"It is true that any of us who work at one thing all our lives do tend to lose perspective, and overlook considering the subject from the angle of the outsider. Most railroad executives think 'fans' mildly insane, and cannot see any reason for their interest in the operation of a railroad. Incidentally they also tend to underrate the intelligence of the layman, and his knowledge of the subject, notwithstanding the fact that the hobbyist has the time and inclination to study his hobby in great detail, whereas the man who works at it does not have the time—and seldom the inclination when his day's work is over—to dig into the subject.

"The writer lays no claim to being a railroad man, other than being exceedingly interested in the history and development of that industry, but if the fact that for 13 years he traveled about 25,000 miles a year over the railroads of this country, does not entitle him to qualify as an observant constructive critic, it is hard to say who would qualify.

"Our Chapter made a trip last fall to Halethorpe to inspect the Baltimore & Ohio historical exhibition, which was probably the first trip of its kind, where everyone paid his own fare, that has ever been made from New York. The Baltimore & Ohio was keenly interested in doing everything possible for the party and made many friends thereby. It also got some passenger business to Chicago as a result of it.

"The next trip was to Philadelphia to inspect the locomotive exhibits in the Franklin Institute. Again everyone paid their own fare. *These trips have proved so popular that we plan to approach certain railroads this year, to work out trips on Sundays to points of special railroad interest.*

"The New York Central invited several of the railroad hobby groups to inspect its facilities at the Grand Central Terminal. A most interesting and instructive afternoon was spent and the New York Central made some friends, and without doubt will get something more tangible than good will out of it.

If the publicity departments of the railroads would awake to the possibilities, and co-operate with these hobbyists, they would get a great deal of free advertising, which would be carried right where it would do the most good. There is much that can be done, at very little cost, by encouraging the railroad study groups.

"It is a sad commentary on the foresight of some of our railroads which have burned up historical documents, and even today permit such material to be neglected in dark corners, to be destroyed eventually as rubbish, but will not permit a railroad historical society to have, and preserve them. On one railroad, the earliest motive power record they have today is 1899! If that road desires accurate information as to the history of its

locomotives, it must request that information from the writer, who spent many weeks digging to establish the authenticity of the material he worked up piecemeal. Such records should be kept, or placed where posterity can make use of them.

"Speaking for one organization, we can say that railroad hobbyists are anxious to co-operate in any way with the carriers, if given half a chance, but the officials of the railroads must get out of their heads that railroad hobbyists are all 'crackpots.' A visit to one of our regular monthly meetings would be enlightening to them."

Editorial Read at Meeting

A. Sheldon Pennover, treasurer of the New York Chapter of the Railway and Locomotive Historical Society, calls attention to the fact that the editorial was read to a group of the members of that society. "I wish to inform you," he said, "of the enthusiastic reception accorded it, for in no small measure it puts before your readers a much neglected subject of importance. If the railroad executives will but act on the valuable suggestions the article contains, I am sure they will find a readiness on the part of the public to interest itself in many phases of railroading, with profit to all concerned."

Other Letters

Brief extracts from some of other letters follow:

"Some months ago I needed data covering a class of well known locomotives used during the nineties by a prominent eastern road, and wrote the S. M. P., sending him reply postage; but I never got an answer. This railroad does not enter this city, but somehow I'm not overly anxious to travel on it."—*P. T. W.*

Charles E. Fisher, president of the Railway and Locomotive Historical Society, includes this comment in his letter:

"To the railroad man, railroading is all in a day's work. To Mr. Citizen there is something appealing about the whole business. The locomotive and the men who run them are a magnet; the ways of directing trains in a busy passenger station or in a freight terminal are magic and the mysteries of an engine terminal are most awesome. Let any railroad announce that it will conduct, on certain days, the public to its various facilities, and I'll promise you that the conductor of these tours will be surprised, not only at the number of people who will come, but by their knowledge and the intelligent questions they will ask. The more people we have in this country who are familiar with railroad operation and railroad problems, the better it will be for the country as a whole, not only from a remunerative point, but from a legislative view as well. The antipathy towards the railroads is passing with the older generation. The coming generation seems to be possessed with fairness and a spirit of inquiry, but it will all go to naught if the railroads don't avail themselves of it."

A. W. Ainsworth, of William Ainsworth & Sons, Inc., Denver, Colorado, says, among other things:

"A rapidly increasing number of mature men are becoming interested in model locomotive building. Therefore, if the railroads will recognize this interest that is being shown in the battle of the Iron Horse and make overtures to the school children, Boy Scouts and the various organizations of grown-ups, a sentiment can be built up that will take more than our political demagogues to overcome.

"To realize the interest shown in locomotives, you merely have to view the interest shown in the locomotive at the Franklin Institute at Philadelphia, where the youngsters can climb all over it and through an ingenious mechanical device can actually move the locomotive by operating the throttle, resulting in a thrill that is not easily forgotten.

"The danger that the railroad officials lead us to believe exists around a railroad is but small compared to the danger encountered when our children cross the traffic congested streets on their way to school and the movies. In other words, railroad officials must recognize facts that exist and forget their old hide-bound rules and regulations and make an effort to cultivate the important American prize, the public sentiment."

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended March 23 totalled 607,780 cars, an increase of 10,348 cars as compared with the week before but a decrease of 2,256 cars as compared with the corresponding week of last year. This was, however, an increase of 127,821 cars as compared with 1933. Loading of miscellaneous freight, coal, and forest products showed increases as compared with last year. The summary, as compiled by the Car Service Division of the Association of American Railroads, follows:

Revenue Freight Car Loading

For Week Ended Saturday, March 23

Districts	1935	1934	1933
Eastern	139,140	142,582	107,865
Allegheny	124,453	121,628	86,567
Pocahontas	49,905	47,371	30,109
Southern	98,098	95,957	79,833
Northwestern	66,749	69,042	57,191
Central Western	83,192	84,074	73,962
Southwestern	46,243	49,382	44,432
Total Western Districts	196,184	202,498	175,585
Total All Roads	607,780	610,036	479,959
Commodities			
Grain and Grain Products	25,850	29,884	31,355
Live Stock	10,679	13,643	15,035
Coal	139,659	134,854	92,429
Coke	5,748	7,394	4,183
Forest Products	26,046	24,875	15,970
Ore	4,112	4,378	2,255
Merchandise L.C.L.	161,164	166,598	155,267
Miscellaneous	234,522	228,410	163,465
March 23	607,780	610,036	479,959
March 16	597,432	627,549	453,637
March 9	587,270	614,120	441,361
March 2	604,642	605,717	481,208
February 23	552,896	574,908	462,315
Cumulative Total, 12 Weeks	6,893,196	6,954,978	5,750,939

Car Loading in Canada

Car loadings in Canada for the week ended March 23 totaled 43,798, as against 42,313 cars last year and 43,358 cars for the previous week, according to the compilation of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
March 23, 1935	43,798	23,753
March 16, 1935	43,358	23,872
March 9, 1935	41,823	24,168
March 24, 1934	42,313	25,050
Cumulative Totals for Canada:		
March 23, 1935	512,130	272,219
March 24, 1934	491,640	273,493
March 25, 1933	396,215	203,882

Temporary Rate Increase Allowed

I. C. C. denies railroad proposal but authorizes emergency charges until June 30, 1936

WASHINGTON, D. C.

TEMPORARY increases in freight rates which it is estimated may increase railroad revenues by about $85,000,000 annually, or about half the amount of the increase proposed by the carriers, have been authorized by the Interstate Commerce Commission in its decision in Ex Parte 115, dated March 26 and made public on March 30. This was done reluctantly, in an effort to extend partial relief in the emergency situation confronting the roads which has grown worse while the proceeding has been before the commission.

Denying the application filed by the railroads on August 27 for rate advances which it was estimated would add $170,000,000 to their revenues, as a partial offset to increases in wages and in prices of materials and supplies estimated at $293,000,000 a year, the commission has authorized the railroads to put into effect emergency charges or surcharges on a large part of their freight traffic, but with many important exceptions, for a period to end June 30, 1936, similar, except in amounts, to these which were authorized in the advanced rate case of 1931 (Ex Parte 103) which were in force from January 4, 1932, to September 30, 1933. The general increase is 7 per cent of the present rates but many of the increases are of less amounts.

A 5 to 4 Decision

The denial represents the unanimous opinion of the nine commissioners who participated in the case, all of whom indicate agreement with the conclusion expressed by the majority that such increases as were proposed by the railroads would be "an inadequate and dangerous method" of meeting their problems. Five of the commissioners, however, Meyer, McManamy, Lee, Mahaffie, and Splawn, find the evidence not sufficient to warrant them in expressing a judgment, counter to that of the railroad traffic managers, that no increase whatever would be efficacious at this time. They also point out that many of the shippers have increased their prices.

The majority take the view that the railroads are confronted by a grave emergency, marked by declining net earnings and rising operating costs due to increases in wages and prices of materials, which warrant such measure of rate relief as may be accorded under present conditions during the next 15 months. They refer to various plans now under consideration which give promise of stabilizing the general transportation situation and improving the financial condition of the railroads but point out that aid from these sources is not likely to be afforded for some time. To meet the immediate and pressing need of the railroads for additional revenues necessary to prevent further impairment of their ability to furnish adequate transportation the emergency charges are authorized.

The dissenting members, Chairman Tate and Commissioners Aitchison, Porter, and Miller, believe that railroad freight rates are now at the "ceiling of reasonableness," and that increases of a general nature would make them clearly unreasonable and tend to defeat their own purpose by accelerating the loss of traffic to competing forms of transportation.

Five votes constituted a majority because Co-ordinator Eastman is temporarily relieved of most of his duties on the commission, except in the case of a tie, and there is one vacancy since the expiration of Commissioner Farrell's term on December 31.

So far as revenue needs are concerned, the commission finds that "it is conceded by all that the applicants have made out their case," but the proposal was rejected on the ground that the ultimate effect of establishing the proposed rates as whole would probably be to harm rather than help the railroads through diversion of traffic to other forms of transportation and in other ways, that the proposal would increase the rates upon certain kinds of traffic above a just and reasonable level, and that many of the increases would result in undue discrimination and would represent distortions of relations which have been prescribed by the commission in previous cases.

The four dissenting commissioners believe that even the emergency charges allowed will have such effects and three of them made the point that they were not covered by the record. As to agricultural products the report says the finding in Ex Parte 103 that agriculture was "in a worse financial plight than the railroads" is to a large extent still true.

Emergency Charges Vary

The railroads had proposed increases on most of their freight traffic in varying amounts, generally 10 per cent, subject to certain maxima and exceptions. The emergency charges authorized are set forth in detail in appendix A to the report. In general, the charge on carload traffic is 7 per cent of the total line-haul transportation charge based on present rates, but subject to a maximum of 5 cents per 100 pounds. On a long list of commodities other specific maximum charges less than 5 cents are provided, and these take precedence. No charge is authorized on less-carload traffic for distances generally less than 220 miles, and for greater distances the charges range from 1 cent to 11 cents.

No emergency charges are authorized for grain, grain products, rice, hay, straw, cotton, cottonseed, citrus fruits, certain fresh fruits, white potatoes, fresh vegetables, dried beans and peas, cattle, sheep, hogs, milk, lumber, and fertilizers.

On coal and coke charges ranging from 3 to 15 cents per net ton are authorized, and on iron ore 10 cents per net ton. A single increase is specified for so-called lake cargo coal and iron ore, even though there may be 2 rail hauls separated by the water movement. The charge on petroleum products is 1 cent per 100 pounds. On sand, gravel, and certain kinds of stone the maximum charge is 1 cent per 100 pounds, and no charge is permitted where present line-haul rates on these commodities are $1 per net ton or less. An emergency charge of 10 per cent is authorized in connection with switching and certain other accessorial charges, subject to exceptions. The carriers' proposal to authorize a charge for issuance of order bills of lading was disapproved.

The majority report is silent as to the amount of additional revenue which the railroads would probably

derive from the charges authorized, but in the dissenting expression of Commissioner Miller it is stated that the report "would appear to afford about one-half of the additional revenue estimated by the carriers in their proposal," namely, about $85,000,000 annually. This amount is but little more than is needed to pay the increase in railroad wages, already made in restoring half of the 10 per cent deduction made in 1932, making no provision for the additional 5 per cent which went into effect on April 1, for the higher prices of materials and supplies which have come about under N.R.A. codes, nor for the demand for increased maintenance.

The commission finds reason to believe, however, that ways and means can be found of combining improved equipment and service with reduced costs, and expresses the hope that the Co-ordinator's studies, together with the increased opportunity for co-operative action made possible by the formation of the Association of American Railroads, will result in important reductions in the cost of railroad transportation and other improvements in the railroad situation. Such efforts and analyses of the rate structure for the purpose of adapting it to changing conditions, the commissioners believe, hold forth much more promise of beneficial results than could be obtained from a "permanent" increase in rates.

The report calls attention to the fact that, "after the submission of this proceeding, and without notice to the applicants, the governors of a number of states severally protested by letter the proposal for increases in rates on coal," and says that "these protests cannot avail to alter the record made before us by witnesses called and testifying in open hearings, and our decision in this proceeding will be based upon the record made in conformity with usage and law."

Following are a condensation of the conclusions of the majority, their expressions as to the railroad future, and some extracts from the dissenting opinions:

Conclusions

Previously in this report we have called attention to some points of similarity between this proceeding and Ex Parte No. 103. There we found that the general increase of 15 percent then proposed had not been justified, but that distrust of railroad securities was rapidly gaining such elements of panic that a slight charge on the traffic of the industries of the country best able to stand it might justifiably be imposed through freight rates for the purpose of increasing confidence and averting developments which might further disturb an already tremendously shaken financial situation, and to avoid impairment of an adequate system of transportation.

We then observed that the refunding needs of the carriers in the immediate future would not be great, and called attention to maturities of bonds and equipment obligations in the years 1932-35, inclusive, which would average about $263,540,000 annually. It is shown now that the class I carriers will be faced with maturing funded debts aggregating $380,706,000 in 1935, and $434,957,000 in 1936, including $204,307,000 in loans from the Reconstruction Finance Corporation which will become due in 1935 and 1936. In 1931 we said that for the present and some time in the future needs for new capital were not likely to be of commanding importance. In the intervening three years there has been widespread recognition of the desirability, if not the necessity, of radical changes in the design and construction of passenger as well as freight equipment, and the development of new types of motive power. Other important changes in the railway plant may become imperative.

Although undermaintenance was becoming noticeable in 1931, we said that the railroads at that time had a superabundance of both equipment and facilities, many cars and locomotives being in storage in good physical condition. Between 1931 and 1933 the number of serviceable freight locomotives available to the class I railroads was reduced by 4,144, a reduction of 19 percent. The number of serviceable freight cars was reduced in the same period by 291,524, or about 13 percent. In 1933 these carriers had 1,951,645 serviceable freight cars compared with 2,119,999 in 1922. Serviceable freight locomotives in 1933 totaled 18,293 compared with 24,536 in 1922. These differences are not offset by the increase in average capacity of freight cars and tractive power of locomotives. The railroads today have available a considerably smaller supply of serviceable freight-carrying equipment and of motive power than they had in 1922, when the situation was notoriously bad. The continuing undermaintenance of equipment is so serious that its early correction will probably be necessary even under the present volume of traffic. The record is less definite as to the extent of undermaintenance of way and structures, but undoubtedly it, too, is considerable.

In 1931, when we found that there was an emergency justifying the approval of temporary increases in freight rates, the class I carriers, as we have already pointed out, had net railway operating income amounting to $526,627,852. In 1933, the best year since 1931, they earned less than 91 percent of that amount. As a whole in 1931 their net income exceeded fixed charges by $134,761,911, but in 1932 and 1933 they incurred deficits after such charges of $139,203,821 and $5,862,836, respectively.

The gradual increase in industrial activity since the early months of 1933 has had a favorable effect on railroad traffic and earnings, insofar as comparison with 1932 is concerned. The total car loadings for 1934 were 5.4 percent and 9.2 percent greater than those in 1933 and 1932 respectively, but there was a drop of 2.4 percent in net railway operating income in 1934 under 1933. Although there is good ground for the belief that there will be some further expansion of general business during the present year, its effect upon railroad traffic and gross and net earnings is problematical, because of ever-increasing competition with other forms of transportation. It may well be that losses of traffic on this account will leave the rail carriers with little, if any, more traffic or gross revenue than they had in 1934. Even improvements in traffic and gross revenue, however, will probably not produce a corresponding gain in net revenue. Any substantial increase in the volume of traffic would probably require more than a proportionate additional expenditure for maintenance, as before indicated; and further, there are no indications of a decline in the ratio of wage and salary payments and taxes, including probable expenditures for pensions, to operating revenues. This ratio increased from 48.9 percent in 1929 to 54.8 percent in 1932, receding to 51.3 percent in 1933 on account of the temporary wage reduction. If basic wages had been paid in that year the ratio would have been 55.9 percent.

Some important differences between this proceeding and Ex Parte No. 103 should be mentioned. Throughout that proceeding the chief emphasis was on the need of the carriers for sufficient revenue to enable them to meet their fixed charges and thereby maintain their financial credit. There was little or no evidence from traffic officials.

In this case the applicants made a thorough survey of the rate situation before presenting their proposals, and we have before us the testimony of responsible traffic officers that in their belief rate increases would result in larger aggregate revenues. In 1931 there had been a collapse in general commodity prices, and a further downward movement was in progress. Since that time prices have in general been increased materially, many of the shippers who are opposing the proposed increases in railroad rates have increased the prices of materials and supplies which they sell to the railroads, and the general situation of the shippers of many commodities has considerably improved.

Shortly after our decision in Ex Parte No. 103 the Reconstruction Finance Corporation was created by the Congress for the purpose, among others, of aiding in the temporary financing of the railroads, and this instrumentality has been of material service in preventing their financial collapse. In addition, provision has been made for loans through the Administrator of Public Works to aid in the financing of railroad maintenance and equipment subject to our approval as desirable for the improvement of transportation facilities. Despite the aid of these loans the financial situation of the railroads and the physical condition of their properties are in general worse than they were in 1931. Their immediate problem is not one of profits for railroad owners, but is rather one of enhancing railroad earnings sufficiently to cover their rising operating expenses and taxes and particularly to enable them to maintain their plant in a condition to enable them to handle a volume of traffic which has been increasing somewhat with business recovery. So far as revenue needs are concerned, it is conceded by all that the applicants have made out their case, but it is urged by various parties that the

rate increases proposed, or any increase of a general nature, if permitted, might subtract from, rather than add to, applicants' revenue.

There is room for doubt on this point. Without material changes in many conditions at present existing, especially the widespread competition on unequal terms which the railroads now face from other forms of transportation, it is possible that a general increase in rates for permanent or indefinite duration, such as applicants propose, would in the long run do the applicants more harm than good. Their proposals, broadly stated, increase long-haul rates relatively more than short-haul rates, thus adding to the disadvantage under which long-haul shippers already labor, thereby tending to lessen the traffic which still largely moves by rail.

Upon the evidence it is our conclusion that the increases proposed, considered as a whole, many of which by their nature may be established only by incorporation into the existing rate structure, would in many individual cases increase revenues, if at all, only temporarily; that many such increases would result in undue prejudice and preference as between different classes of traffic and as between different communities and shippers; that in many instances the proposals would result in distortion of relations prescribed by us for which distortion no sound justification has been presented; that the ultimate effect of establishing the proposed rates as a whole would probably be to harm rather than help the railroads through diversion of traffic to other forms of transportation and in other ways; and that the proposals would increase the rates upon certain kinds of traffic above a just and reasonable level. This latter conclusion applies particularly to certain products of agriculture, to live stock, and to certain products of forests.

As a temporary measure, for the immediate alleviation of the more acute financial distress of the railroads, however, it is not so clear that the results of a carefully selected, moderate increase would be adverse. As above stated, certain of the shipper representatives suggested that the principle of the former emergency charges, even though they were designed to meet a somewhat different situation, might well be employed in the present emergency. The evidence is not sufficient to warrant us in expressing a judgment, counter to that of applicants' traffic managers, that no increase whatever would be efficacious at this time.

Although it is difficult to approximate the amount of additional revenue which resulted from the charges authorized, for the reasons pointed out in the third report, 191 I. C. C. 361, we believe that they had the effect of increasing revenue in a substantial, although inadequate, degree. While we know that certain traffic moved at rates which included the emergency charges, the extent to which the charges may have discouraged or diverted traffic and thereby lessened gross revenues, if at all, is largely problematical. Under present conditions it appears that emergency charges corresponding in some degree to those in effect during that period might be more productive from a revenue standpoint and that they would be less burdensome to industry than they were when the trend of industrial activity was downward. We are of opinion, therefore, that the emergency confronting the railroads is of such gravity that they should be permitted to add a system of emergency charges to most of the existing freight rates and charges for application during the remainder of 1935 and the first half of 1936.

In Ex Parte No. 103 we did not undertake to grade the charges there authorized according to distance. Under existing conditions we believe that there should be some gradation of this kind, as the force of motor competition varies to some extent with distance, and this is true as to carload as well as less-than-carload traffic. We shall not go so far as to deny an emergency charge on the shorter hauls of carload traffic, however, as we do with respect to less-than-carload traffic.

The emergency charges authorized are set forth in detail in Appendix A. In Part 1 are shown the general bases of these charges. On carload traffic in general the emergency charge is 7 percent of the line-haul transportation charge, but not more than 5 cents per 100 pounds. Specific maximum charges on various commodities which will take precedence over the general 5-cent maximum are shown in Part 4. Part 5 relates to coal, iron ore, petroleum, and certain other commodities for which specified charges are designated without reference to Part 1. Part 2 consists of rules relating to special services and also rules governing the application of the charges set forth in the other parts. In Part 3 are listed the commodities which are exempted from the application of the emergency charges.

It should be clearly understood that the plan of emergency charges here provided is permissive in character. Where the carriers find it necessary to make exceptions in the application of the charges, avoidance of undue prejudice and preference should always be kept in mind. No exceptions should be made primarily to influence the routing of traffic, to attract traffic from one carrier or route to another, or to favor an industry on one line at the expense of industries on other lines.

Emergency Charges Authorized

We find that the carriers' application, as a whole, should be denied, and our plan of emergency charges is offered in substitution of applicants' proposal. Except as we have had occasion to point out specifically certain of those proposals as not justified on the present record, we are not passing upon the lawfulness of the individual proposals, which cover many thousands of rates and necessarily cannot be dealt with in a report of this compass, particularly the numerous exceptions affecting Mountain-Pacific territory. For example, following applicants' proposals, we have excepted citrus fruit from the application of the charges. Certain of the applicants proposed increases in some of the rates on this commodity in the territory above mentioned. As to that proposal and many others of like character, we are here making no findings.

As in Ex Parte No. 103, we shall grant the necessary authority under Section 6 for filing blanket supplements embodying the emergency charges here provided for, and such supplements will be permitted to take effect without suspension, subject to the proviso that the resulting rates will in all respects be subject to complaint or to investigation and to determination as to the lawfulness of schedules or rates, as provided by the act.

In incorporating these charges in the tariffs, practical considerations may require minor deviations from the plan as set forth in Appendix A, and these will be permitted where they do not amount to a substantial departure from the plan.

Subject to the qualifications indicated, we find that the present rates and charges, as increased by the emergency charges here authorized will not be in excess of just and reasonable rates for a period to terminate June 30, 1936.

In their petition applicants prayed for an order affording relief from the operation of the long-and-short-haul and aggregate-of-intermediates provisions of Section 4 of the act to the extent necessary to authorize departures from that section which might result from the rates which they proposed. At the oral argument they suggested that a fourth-section order similar to the one issued in connection with Ex Parte No. 103 would be appropriate. As the scope of the proceeding clearly includes the question of fourth-section relief, and as the situation clearly presents a special case under the statute we shall enter an order authorizing departures from Section 4 in order to permit the emergency charges here approved to be established. An order will also be entered, amending outstanding orders for the same purpose.

The Railroad Future

Under a heading identically worded in our original report in Ex parte No. 103 we made certain observations as to what could be done to stabilize railroad transportation in a more enduring way than that afforded by a temporary rate increase. Some of the suggestions there made have been carried into effect, and others have not been.

Section 15a of the act has been modified largely in accordance with our recommendations. Legislation for the regulation of all competitive forms of transportation has been delayed, but the Congress in the Emergency Railroad Transportation Act, 1933, made provision for studies looking toward recommendations for further legislation. As required by that act, we transmitted to the President and the Congress reports of the Federal Co-ordinator of Transportation dealing with the question of further legislation on January 20, 1934, March 10, 1934, and January 23, 1935. In transmitting the second and third reports we urged the enactment of laws for the regulation of water and motor carriers, and in commenting on the latest report, we said:

> The bills for the regulation of water and motor carriers we regard as vital. Upon their early enactment depends the preservation and development of a healthy, adequate, co-ordinated system of transport for the nation. We can have such a transport system only by unified regulation of these important, competing agencies; and the public needs and welfare must be

the activating principle in such unified regulation, so that all forms of agencies for carriage may prosper within their appropriate fields, and the national transportation requirements may be met.

The bankruptcy statutes have been amended for the purpose of facilitating and expediting the financial reorganization of railroad companies whose financial structures are not adapted to present conditions. We have joined with the Co-ordinator in recommending some further changes in these statutes for the purpose of improving the procedure thereunder.

The railroads have recently associated themselves in an organization intended to promote the co-operation which we urged as essential in Ex parte No. 103. The Co-ordinator and his staff have exhaustively studied and reported upon proposed improvements in railway and freight passenger service, pooling of equipment, and other plans intended to bring about operating economies through greater degree of co-ordination in railway transportation. We are hopeful that these studies, together with the increased opportunities for co-operative action made possible by the formation of the Association of American Railroads, will result in important reductions in the cost of railway transportation and other improvements in the railroad situation. The effects of all these ameliorative measures which have been mentioned, however, will not fully be felt for some time to come and will therefore not meet the immediate revenue needs of the railroads which seriously affect their ability to render transportation service.

It must be evident that a railroad rate structure which was well adapted to the conditions of 15 or 20 years ago is not necessarily well adapted to the conditions which prevail today, and the same is true of railroad equipment, service, and operating methods. So far as rates are concerned, such increases as are now proposed are an inadequate and dangerous method of meeting these new problems. They call for much more intensive study than has preceded these proposals, and it is probable that in many instances more is to be gained by reducing rates than by increasing them. Certainly it will be necessary to adapt equipment and service to the new competitive conditions in order that they may attract traffic, and in that connection to reduce operating costs in every feasible way. There is reason to believe that ways and means can be found of combining improved equipment and service with reduced costs. In this process of gradual change, it is equally desirable to subject the rate structure to the most detailed analysis, for the purpose of discovering where it now repels or impedes traffic, where reductions can be made which will by their effect on traffic increase aggregate revenues, and where increases are possible which industry and traffic can bear without harm. We know of nothing more impotrant to the railroads than such intensive studies. We hope that through their new Association of American Railroads the railroads may be able vigorously to engage in these analyses of existing conditions, and believe that such efforts hold forth much more promise of beneficial results than could be obtained from a permanent increase of freight rates.

Chairman Tate Dissents in Part

Tate, Chairman, dissenting in part:

Insofar as the foregoing report fails to dismiss entirely the petition of the carriers, I dissent from the result. If the only essential fact necessary to be proven in order to enable the Commission to grant the prayer of the petition were the need of the carriers for more revenue the case would clearly be made out. But, it is one thing to diagnose a case to the point of discovering the ailment and another to permit the administration of a suggested remedy. It seems to me that the real effect of adding surcharges to any large number of commodities for carriage would be harmful rather than helpful to the petitioning carriers. The record demonstrates that there is, generally speaking, a strong public sentiment in favor of the rail carriers' return to prosperity and this is shown to prevail to such an extent as that many have refrained from changing their methods of transportation so as to make it convenient to use competing forms, though, in many instances, it was shown that there might be some saving in money by a change to the competing forms. I do not believe that the loss of any of this public sentiment is to be compensated for by the very questionable amount of extra revenue that may apparently be gained by raising freight rates at a time like the present, when the hope and desire of all is that business increase and that there be more necessity for the transportation of articles of commerce and, hence, a greater revenue for all methods of transportation, because there would be more traffic.

When we remember that the burden is on proponents to justify increases in rates, when they are protested, surely, all the more, must that burden exist when we are asked to promise in advance that there will be no suspensions. The record, while, as above stated. clearly proving the need of the carriers for more revenue (though not convincing that the method here suggested will bring that revenue) equally as well establishes that practically all of the various kinds of business producing the commodities upon which the surcharges are to be added also need more revenue. I can see but little reason for selecting certain of these commodities and applying the surcharges, when, in many instances, the commodity to which the surcharges are to be added can just as ill afford to pay them as those other commodities which are excused from bearing surcharges. I would dismiss the petition and excuse them all.

Commissioner Aitchison Dissents

Aitchison, Commissioner, dissenting in part:

I concur in the disposition of the applicants' proposals as a whole, but dissent from the finding of reasonableness as to certain rates when increased by the emergency surcharges suggested in the report.

The record makes clear that by and large the general level of freight rates is already at the ceiling of reasonableness. Regardless of considerations of cost of service, traffic cannot and will not bear a materially higher level. It is also established that the general level cannot be increased materially without having the reverse effect of increasing the difficulties of the applicant carriers, since the result will be such a suppression or diversion of tonnage that the loss of gross revenue will more than offset any increases on the tonnage which must remain on the rails.

The petition places upon us a duty to exercise an administrative discretion. While indeed it would be comfortable to be able to avoid responsibility for the exercise of such discretion, we may not do so by abdication of duties imposed upon us by the act creating the Commission, and by virtual redelegation of powers to the applicants under the guise of paying proper respect to their managerial discretion. Nor do we in fact respect managerial discretion when we substitute a slightly variant set of surcharges for the detailed and specific proposals of the applicants, which, they strongly urge, represents the earnest efforts and best judgment of their traffic officers. In the exercise of our discretion we must consider whether the record shows that the increases proposed are likely to have the effect the applicants suggest or will have some other effect: if the record is convincing that the result will be detrimental to the interests of the carriers in that it will (*a*) place them in a more unfavorable position than they now occupy in a progressively losing warfare of competition with other forms of transport, or (*b*) tend to postpone the general revival of business activity of the carriers, the petition should be denied.

The record convinces me upon both of these points. In fact, the proof seems overwhelming; it comes from hundreds of witnesses directly concerned and well informed; their evidence is affirmative and detailed. Much of it was challenged only by inference or by offsetting reference to the concensus of opinion of certain traffic officers who participated in the discussions of the carriers while formulating the proposal, often given to us second-hand by other officers who could not speak with knowledge of the facts as to all commodities involved.

I am not able to concur in the suggestion that the carriers may in their discretion impose an elaborate schedule of emergency surcharges, because of a supposed analogy to conditions which obtained in 1931, and because of our precedent determination in Docket Ex Parte No. 103.

We cannot disqualify ourselves now from hereafter giving all proper and unprejudiced consideration to every application for suspension of any surcharge which may be filed with us, as to which no one hitherto has had opportunity to express himself, with no record behind us to justify or explain the particular proposals, and when the burden of justification is by law placed upon the carrier.

The surcharges have the added demerit of increasing the existing disparity between the peaks and valleys in the rate structure. If made effective, they will tend to divert traffic to other forms of transport, though not to the same extent as the proposals

of the applicants, because the suggested surcharges are generally smaller in amounts.

What amount of added revenue will accrue to the carriers from our suggestions is not estimated in the report: doubtless we could not estimate it from the facts in this record. Nor has any consideration been given to the question whether the surcharges applied on the resultant diminished volume of traffic will equal the revenue which would accrue on tonnage which would be carried at the present lower level. Indeed, as the record has not been addressed to that question, we are in point of law necessarily unable to find that these surcharges will in their net result be of any benefit whatever to the carriers.

The analogy with the situation in 1931 has been pushed too far. The credit of the carriers was the serious concern; what was feared, and what we endeavored to aid them to avoid, was a series of credit defaults which would pull down a succession of important carriers into bankruptcy, and, because of the immediate critical circumstances of all financial institutions, would carry along with them into disaster the banks and insurance companies to the instant and grave detriment of public security.

But the credit situation which gave such grave concern in 1931 was shortly thereafter wholly altered by the creation of the Reconstruction Finance Corporation—repeatedly given further life by Congress after the original term for its life had passed—and by the creation of a fund for loans through the Public Works Administration. The strong arm of Federal support has been put under the deserving but embarrassed carrier, and the banking situation is again in hand. There has been a marked change in the general character of the Federal policy. Instead of it being deemed essential to keep every rail carrier from being in default, if possible, it is now the recognized policy of the Congress to expedite and encourage necessary reorganizations and scaling down of top-heavy financial structures or those out of line with normal capacity to earn.

It is thoroughly established by the record that the prosperity and health for the railroads which every citizen earnestly desires can come only from additional traffic. Higher rate levels on the rails will postpone the return of normal activities to the country as a whole; they will also encourage these opposing and competing forms of transport and will lengthen the tactical radius of their operations; they will cause consumers to seek other sources of supply, and producers to look for other forms of utilization; and they will measurably contract the purchasing power of the individual upon which depends production and distribution. These results make for the continued distress of the rails.

The answer to the problem before us will be found (1) in the return of a normal condition of business activity and movement, to be achieved only through continued and patient cooperation of carriers and shippers, with the thought of present profit submerged for the moment, even to the point of personal sacrifice, in the interest of the speedier resumption of better conditions for all; and (2) by such prompt action on the part of Congress as will insure that competition between the various forms of transport agencies shall be on equal and fair terms, with the welfare of a national transport machine as the objective.

Commissioners Porter and Miller Dissent

Porter, Commissioner, dissenting:

With all that Commissioner Aitchison says in his separate expression, I am in accord. All that the majority say under "The Railroad Future" I heartily endorse. But practically all of it argues against any increase in freight rates, for if the struggle between the railroads and other forms of transportation is to become more intense, as it surely is if the inequality brought about by federal regulation of one form and not of the others is to continue, then the railroads had better fortify themselves by a reduction in freight rates instead of an increase. The latter is certain to play into the hands of their competitors by encouraging traffic to go to cheaper forms of transportation, whereas a reduction would have the opposite tendency and at the same time promote public good will, without which the railroads should have long since learned that they cannot hope long to be successful.

The outstanding reason for the tremendous present volume moving by truck is the difference in transportation charges. Any widening of that difference is certain to drive a still larger proportion to the trucks, and once there it is far more difficult for respondents to regain than it is to lose it.

What the majority are doing is against all sound economic law, against sound common sense, against the best interests of the railroads themselves, and certainly against the public interest. I cannot follow them.

Miller, Commissioner, dissenting:

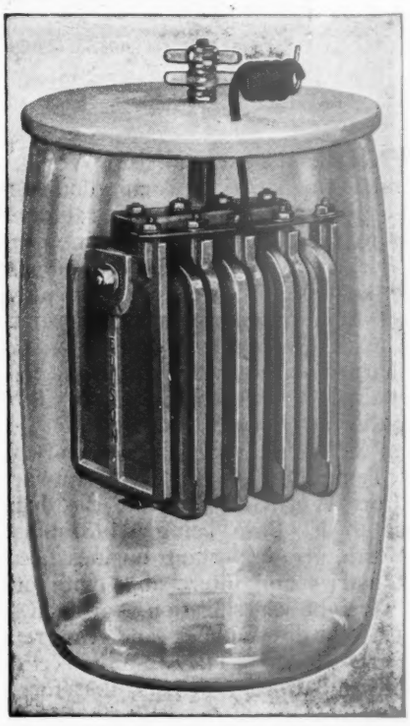
This report approves in part the increased rates proposed by the rail carriers and would appear to afford about one half of the additional revenue estimated by the carriers in their proposal. The testimony, however, is preponderantly to the effect that, if the rates are generally increased, much of the affected traffic will rapidly leave the rails, with the ultimate result that the revenue therefrom will be even less than that realized from the present rates.

The indications are that, even if the estimated increased revenue could be realized, a large portion of it would go to the roads least in need of assistance and that the remainder accruing to those most in need would be of little help to them. If the increased revenue, estimated from the carriers' proposal, could be realized and pooled and used in fair part to help roads most in need of assistance some real benefit might result, but no such proposal has been made.

Heavy-Duty Primary Cell

THOMAS A. EDISON, INC., has placed on the market a heavy-duty primary cell designated as the Edison HA-500. The element has nine plates (four oxides and five zincs), is of 500-a.h. capacity and can be used with any standard 500-a.h. jar and cover.

The new cell is said to deliver a current three to five times as great as that of a standard primary cell and to be particularly effective under low-temperature operating conditions. The oxide plates are coated by a sprayed-metal process, which insures better performance after a longer period of inactivity in open circuit service.

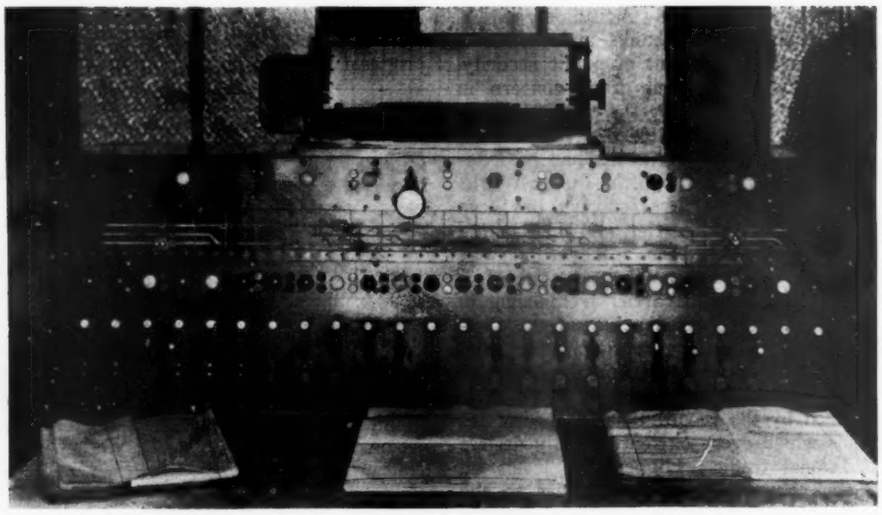


New Edison Cell Completely Assembled

Its higher effective voltage and high current features, as compared with a standard primary battery, reduce the number of cells required to operate a heavy-duty installation by as much as one-third. Where multiple-series connections are normally used, the reduction can often be 50 per cent.

Centralized Traffic Control on the Texas & Pacific

Either-direction operation by signal indication on both tracks of 32-mile line increases track capacity and facilitates train movements



The Control Machine Is in the Office at Fort Worth

BETWEEN Dallas, Tex., and Fort Worth, a distance of 32 miles, the Texas & Pacific double-track main line is constructed with 110-lb. rail and crushed-stone ballast to permit high-speed train operation, and is equipped with centralized traffic control, using power switches and signals for directing train movements to reduce delays to a minimum and to permit trains to be operated with the highest degree of safety. To reduce the hazard at highway crossings, flashing-light crossing signals have been installed at all of the 34 crossings in this territory.

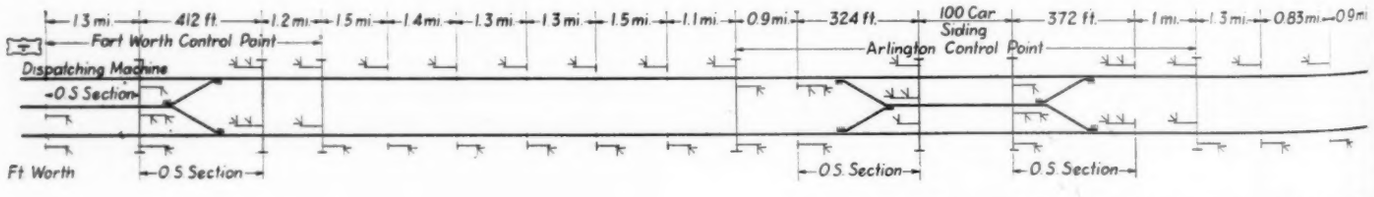
The Texas & Pacific main line extends from New Orleans and Texarkana, on the east, westward through Dallas and Fort Worth to El Paso, the distance from New Orleans to El Paso being 1,143 miles. Dallas and Fort Worth are important business centers with numerous industries and interchange with other roads. The largest freight classification yard on the road, equipped with power switches and car retarders, is located at Fort Worth. The 32-mile section of line between Dallas and Fort Worth is, therefore, a "bottle neck" for train movements.

A second track was built from Fort Worth to Grand Prairie, a distance of 20 miles, in 1929, at which time centralized traffic control was installed on this section. The second track was completed to Dallas in 1931, and the centralized control was extended later over this territory.

Traffic and Track Layout

In 1929 the traffic included 14 passenger trains and 31 freight trains daily with as many as 36 freight trains during peak seasons. This traffic included two through passenger trains of the Gulf, Colorado & Santa Fe. At the present, the traffic includes 10 passenger trains and 10 freight trains regularly, with two or more extras daily. The line traverses a rolling prairie country with a maximum grade of 1.1 per cent and a maximum curvature of 3 deg. The passenger trains handle as many as 18 cars and run at speeds up to 65 m.p.h., while the freight trains handle as many as 100 cars, totaling 3,100 tons, and run up to 45 m.p.h.

The new track layout between Dallas and Fort Worth includes four center passing tracks, each long enough to hold a train of 110 cars. These passing tracks are constructed with heavy rail and are maintained to permit trains to run on them at speeds consistent with operation through the turnouts. In order to facilitate such move-

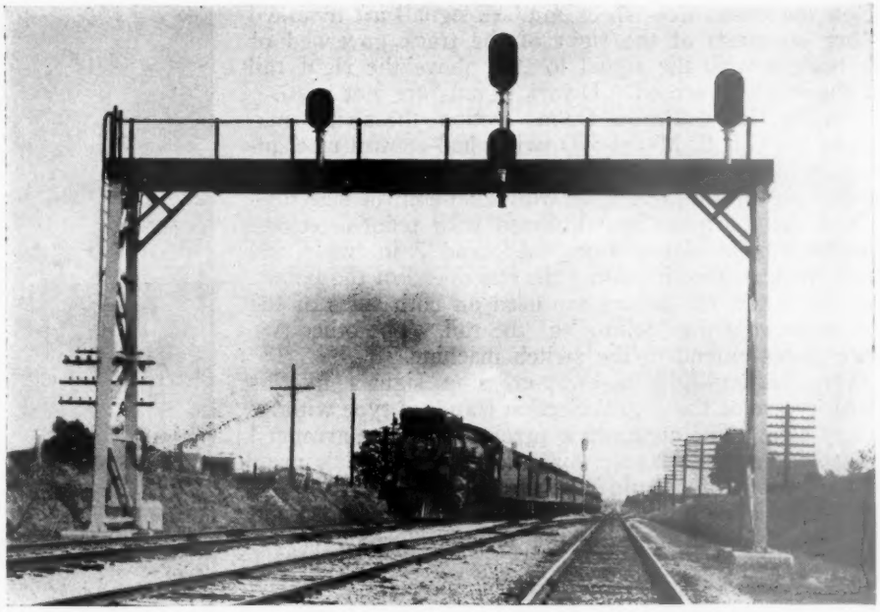


Track and Signal Plan of the Centralized Traffic

ments, No. 16 turnouts are used, permitting speeds up to 25 m.p.h. with safety. The passing sidings, therefore, serve also to cross trains from one track to the other.

The switches at the west end of the siding near Fort Worth are connected into and are operated by an electric interlocking plant near the passenger station. The switches at the east end of this passing track, as well as those at both ends of the other three center sidings, are power-operated. All of these switch machines and the signals for directing train movements in either direction on the main track, as well as into or out of the passing tracks, are controlled from the C.T.C. machine by the dispatcher at Forth Worth.

On this section of the line the trains "bunch" during certain periods of the day so that the peak track capacity is of more importance than the total number of train movements would indicate. With the new track layout and system of signaling, it is practicable to handle a large number of trains in a short period with minimum delay to any train on the road; furthermore, trains can be dispatched when they are ready to leave, without waiting at either Fort Worth or Dallas. For example, eastbound manifest freight train No. 56 is scheduled to leave Fort Worth at 2:20 p.m. and eastbound passenger train No. 2, the Sunshine Special, at 2:25 p.m. When these trains are on time, the regular procedure is to run No. 56 out of Fort Worth on the right-hand track and run the passenger train on the left-hand track until it passes No. 56, and then cross it over to the righthand main track to proceed to Dallas. Likewise, a similar operating condition arises at 8:15 when an eastbound freight train is due to leave Fort Worth five minutes ahead of passenger train No. 4. In this case passenger train No. 7, westbound, which is scheduled to leave Dallas at 8:55 p.m., runs on the right-hand track to Grand Prairie, meeting No. 4 in the meantime, and then crosses over to the left-hand main track at Grand Prairie or Arlington and proceeds to Fort Worth, meeting freight train No. 54 on the way. Thus, with few exceptions, all trains are kept moving while enroute, by signal indications and without train orders. Under this system, the average running time of freight trains in this territory has been reduced one hour, and that of passenger trains 15 min.



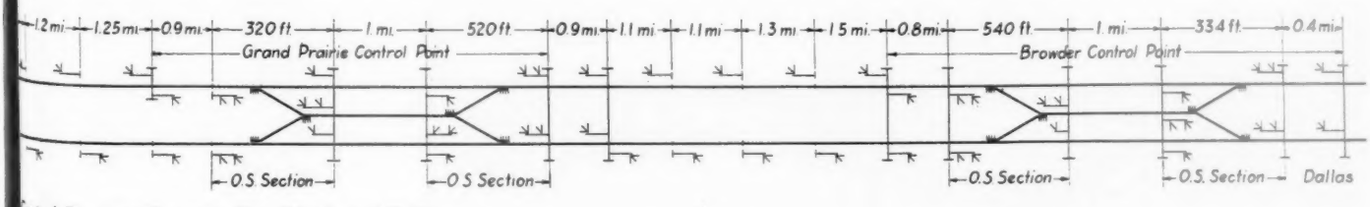
The Sunshine Special at Arlington

Dual-Control Switch Layout Near Dallas

The Control System

The centralized traffic control equipment on this installation is that of the General Railway Signal Company, using the direct one-wire control system of circuits. The control machine in the dispatcher's office at Fort Worth has 16 levers for the control of 21 switches and 79 signals. Lamp indicators above the levers repeat the operations of the switches and signals and show the direction in which traffic is set up on each track. Track-occupancy and "OS" reports are indicated by lamps and the ringing of an annunciator bell. The track diagram in the face of the board reproduces the track layout and indicates the position of the switches. Located in this diagram, at positions corresponding to "OS" points in the field, are small receptacles into which the dispatcher pushes a plug when he receives an "OS" report from that point. This action causes the corresponding needle on the automatic train-graph to record the movement of the train.

The signals on this installation are of the color-light type, having red, green and yellow aspects. In cases where a signal may direct trains over a diverging route, a second unit with a red and yellow aspect is mounted



Control Territory Between Fort Worth and Dallas

below the main three-aspect unit. All signals are mounted either on masts at the right of the track governed or on bridges with the signal located above the right rail of the track governed. Dwarf signals are not used.

On the Grand Prairie-Dallas section, the switch machines are G.R.S. Model-5-D, with dual-control mechanisms, while on the section completed earlier, the machines are of the 5-A type with dual-control selectors. All of the machines are equipped with point-detectors. Insulated gage plates, 1 in. thick and 7 in. wide, are used on three ties, including the one ahead of the points. On the latter, rail braces are used on both sides of the rail to prevent the "rolling" of the rail. The other two gage plates extend to the switch machine.

The flashing-light highway-crossing signals in this territory are of the Signal Section standard type without a stop sign. The approach control circuits are arranged to provide at least 20-sec. operation of the signals prior to the arrival of a train at a crossing.

This signaling and C.T.C. installation was planned and installed by signal forces of the Texas & Pacific.

Interior of One of the Redecorated Lackawanna Suburban Coaches

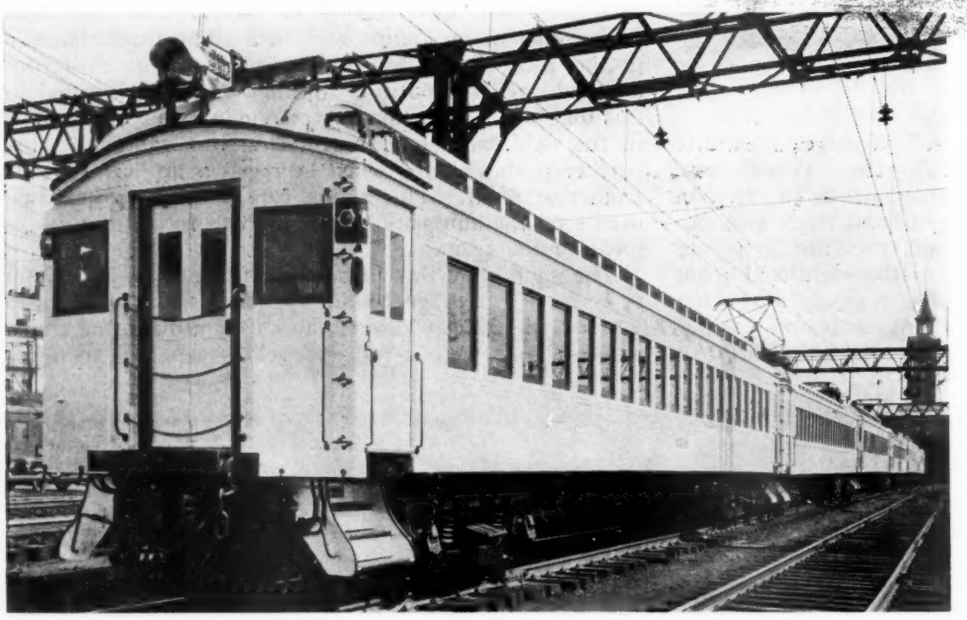
Lackawanna Exhibits Aluminum-Finished Train

DURING the past week the Delaware, Lackawanna & Western has had on exhibition at the Hoboken (N. J.) terminal a six-car suburban train which has been finished with an aluminum surfacing applied directly to the steel plates by a new process. Five of the six cars have recently come out of the shop after having had the finish applied, and a sixth car has been in service for a period of seven months. The finish on these cars is known as "Alumaneal" and is applied by a process known as "Alumanealing," a development of Metalkote, Inc., 103 Park Avenue, New York.

The Finish

In the finishing of the cars of this train, which consists of three motor cars and three trailers of the type built by the Lackawanna when the suburban zone was electrified, the original paint and varnish was completely removed from the surfaces so that they were perfectly clean and free of grease spots. The Alumanealing process consists of applying a heavy liquid substance, a component part of which is finely divided leaflike particles of aluminum metal. In general appearance the liquid resembles ordinary aluminum paint or varnish, and can be applied in the same way the latter are applied; namely, by brushing or spraying. At this point, however, the similarity to paint or varnish ends. After an interval of not less than 15 min. the surfacing is subjected to the direct application of the flame of an oxyacetylene or other blow torch. This sets the surfacing and results in a protective sheathing having, in general, the appearance and characteristics of aluminum metal. Among the changes effected by this heat treatment are surface hardening and the acquirement of a satin-like light-reflecting surface.

The completed finish has an average thickness of from .003 to .005 in. To finish the exterior surface of a coach completely, which involves a triple coating of Alumaneal, requires approximately 25 man-hours of



Lackawanna Suburban Train Finished by the Alumaneal Process—The Trim is Black

labor about evenly divided between applying and "torching" the coatings. This can be done well within two working days. The finish is said not to be affected in any way by heat or the weaving of sheets in a car.

On the six Lackawanna suburban cars the entire exterior steel surfaces, with the exception of the window sash, door frames, brackets, eaves and marker-lamp fixtures, are finished by the same process.

Interior Decoration

The interior of each of four of the six cars has been decorated with a different color combination. The interiors of all of the cars above the tops of the windows have been finished with Alumaneal and below the windows four color combinations have been worked out as follows: (1) Scarlet for window posts and baseboards; (2) a two-tone combination of dark olive green and light green trim; (3) a dark blue with a light blue outline trim; (4) a Nile green finish with light green trim. One each of the cars has been finished with the color combinations Nos. 1 and 3 and of the four remaining cars two each have been finished with the color combinations listed as Nos. 2 and 4 above. The aluminum ceilings brighten the interiors of the cars with well-diffused light, both with artificial and day lighting.

The Alumaneal finish on the interior of the cars has resulted in brightening up the interiors of the cars in daylight and, with artificial illumination, has provided a softening effect and improved light diffusion. While tests have not as yet been made, it is believed that the application of the Alumaneal finish will result in a temperature difference of approximately five degrees between outside and inside temperature.

The one car that has been in service for seven months has been cleaned by the usual passenger-coach cleaning process employed by the Lackawanna and in the seven-months' period has shown so little evidence of the effect of time on the finish that it is difficult to distinguish this one car from the other five which have just come out of the shop.

* * *

Interior View of Modern Air-Conditioned Lounge Car on the "Texas Special" of the M-K-T

Three-Track Vertical-Lift Bridge Has Unusual Features

(*Continued from page 528*)

generator is located in the machinery house, which is V-belt connected direct to the gasoline engine. This generator, which produces a constant voltage at all speeds from 600 to 3,000 r.p.m., can be operated to energize the motor brakes, but only when the engine clutch is thrown into position to raise or lower the span. Thus, movement of the span is impossible except when it is actually being raised or lowered under power.

Span and Rail Locks

The bridge is provided with both span and rail locks of the electro-pneumatic plunger type, and these are fully interlocked with the bridge control mechanism and the signals and smash boards governing train operation. In this interlocking arrangement, the movable span must be seated properly, with both the span and rail locks in place, before the signals can be cleared. Furthermore, the power to the bridge motors must be cut off and the clutch of the emergency gas engine drive must be locked in neutral position. Before the span can be raised, that is, before the bridge operator can get power to operate the bridge, the signals must be set at stop, the smash boards lowered, the span and rail locks withdrawn, and the master lever of the interlocking machine put at normal. Furthermore, all track circuits must be unoccupied between the smash boards. All of these conditions are indicated electrically.

Lift Span Erected in Place

With insufficient room to float the lift span into position without interfering with rail traffic on the old swing span, which could not be permitted, the new lift span was erected in a raised position directly between the towers. This was done by employing inclined bents resting on the piers, which, together with the lower chords of the span, as erected, formed a four-hinged arch to support the span. The stability of this arch was maintained by jacks located on brackets on the tower legs directly at the ends of lower chords of the span trusses. By adjusting these jacks, equilibrium was maintained in the arch as erection continued above. The method employed was carried out without difficulty, and proved highly advantageous.

The bridge was designed and erected under the general direction of T. J. Skillman, chief engineer of the Pennsylvania, A. C. Watson, chief engineer, New York zone, and L. P. Struble, engineer—Newark improvements, and under the immediate direction of T. W. Pinard, engineer of bridges and buildings, New York zone. Waddell & Hardesty were consulting engineers on the superstructure design. The substructure was constructed by Senior and Palmer, New York, under sub-contract with J. Rich Steers, Inc., New York, and the superstructure steel was fabricated and erected by the McClintic-Marshall Corporation, Bethlehem, Pa. The bridge electrical operating and control equipment was furnished by the General Electric Company and was installed by the Beach Electric Company, Newark, under the direction of J. V. B. Duer, electrical engineer, Pennsylvania system. The signal tie-up with the bridge control equipment was handled by company signal forces under the direction of J. S. Gensheimer, engineer of telegraph and signals, New York zone.

NEWS

Two Months Railway Net a 1.57 Per Cent Return

$44,047,014 compares with $60,479,052 or a 2.01 per cent return in comparable 1934 period

Class I railroads for the first two months of 1935 had a net railway operating income of $47,047,014, which was at the annual rate of return of 1.57 per cent on their property investment, according to reports filed by the carriers with the Bureau of Railway Economics of the Association of American Railroads. In the first two months of 1934, their net railway operating income was $60,479,052 or 2.01 per cent on their property investment.

CLASS I RAILROADS—UNITED STATES

Month of February

	1935	1934	Per cent increase
Total operating revenues	$254,940,047	$248,457,242	2.6
Total operating expenses	200,103,243	188,605,786	6.1
Taxes	19,811,396	20,434,675	3.1 Dec.
Net railway operating income	25,719,919	29,420,772	12.6 Dec.
Operating ratio—per cent	78.49	75.91	...
Rate of return on property investment—per cent	1.63	1.85	...

Two Months Ended February 28

	1935	1934	Per cent increase
Total operating revenues	$519,155,876	$506,471,757	2.5
Total operating expenses	413,078,028	384,472,007	7.4
Taxes	39,700,704	41,069,948	3.3 Dec.
Net railway operating income	47,047,014	60,479,052	22.2 Dec.
Operating ratio—per cent	79.57	75.91	...
Rate of return on property investment—per cent	1.57	2.01	...

Operating revenues for the first two months of 1935 totaled $519,155,876, compared with $506,471,757 for the same period in 1934, or an increase of 2.5 per cent. Operating expenses amounted to $413,078,028, compared with $384,472,007 for the same period in 1934, or an increase of 7.4 per cent. Class I railroads in the two months paid $39,700,704 in taxes, compared with $41,069,948 in the same period for 1934, or a reduction of 3.3 per cent. For the month of February alone, the tax bill amounted to $19,811,396, a reduction of $632,279 or 3.1 per cent.

Sixty Class I railroads failed to earn expenses and taxes in the first two months of 1935, of which 12 were in the Eastern district, 13 in the Southern and 35 in the Western district.

Class I railroads for February had a net railway operating income of $25,719,919 which, for that month, was at the rate of 1.63 per cent. In February, 1934, their net was $29,420,772, or 1.85 per cent. Operating revenues for February amounted to $254,940,047, compared with $248,457,242 in February, 1934, an increase of 2.6 per cent. Operating expenses in February totaled $200,103,243, compared with $188,605,786 in the same month in 1934, or an increase of 6.1 per cent.

Class I railroads in the Eastern district for two months had a net railway operating income of $40,549,234 at the rate of 2.86 per cent. For the same period in 1934, their net was $40,579,507, or 2.88 per cent. Operating revenues in the Eastern district for two months totaled $277,145,388, an increase of 3.8 per cent above the corresponding period in 1934, while operating expenses totaled $207,228,844, an increase of 5.5 per cent. Class I railroads in the Eastern district for February had a net of $21,261,543 compared with $19,311,882 in February, 1934.

Class I railroads in the Southern district for two months had a net of $6,637,559, at the rate of 1.28 per cent. For the same period in 1934, their net amounted to $11,567,777, at the rate of 2.23 per cent. Operating revenues in the Southern district for two months amounted to $68,163,091, a decrease of 1.8 per cent below the same period in 1934, while operating expenses totaled $55,082,418, an increase of 8.7 per cent. Class I railroads in the Southern district for February had a net of $3,881,475, compared with $6,295,413 in February, 1934.

Class I railroads in the Western district for two months had a net operating deficit of $139,779. For the same two months in 1934, they had a net railway operating income of $8,331,768, at the rate of 0.77 per cent. Operating revenues in the Western district for two months amounted to $173,847,397, an increase of 2.2 per cent above the same period in 1934, while operating expenses totaled $150,766,766, an increase of 9.7 per cent. For February, the I railroads in the Western district reported a net of $576,901 compared with $3,813,477 for the same roads in February, 1934.

A.R.E.A. 1936 Convention

The American Railway Engineering Association has selected March 10-12 as the dates for its 1936 convention. It has also selected the Palmer House, Chicago, as its convention hotel.

Plan for Reorganization of Milwaukee by July 1

Proposal to readjust road's capital structure will be submitted, says Scandrett

A plan for the reorganization of the capital structure of the Chicago, Milwaukee, St. Paul & Pacific will be submitted to the Reconstruction Finance Corporation and to security holders between now and July 1, according to an announcement made by H. A. Scandrett, president. The Milwaukee was taken out of receivership in 1928, when a financial readjustment was put into effect to reduce the road's funded debt. In each year since 1929 the road has had a deficit, the net income being insufficient to meet its obligations. The road has borrowed approximately $11,500,000 from the Reconstruction Finance Corporation, of which $3,500,000 is a loan granted last December. It solved one financial problem last year through the extension for five years of approximately $7,200,000 of 4½ per cent bonds of the Milwaukee & Northern Railroad, which matured on June 1, 1934. On April 1, a payment of $900,000 principal amount of equipment trust certificates, Series C, became due, while at the same time the company does not see its way clear to meet June and July obligations. April 1 interest payments on equipment trust notes of that date will be paid. The statement issued by the directors follows:

"At the time the railroad company obtained the loan of $3,500,000 from the Reconstruction Finance Corporation to meet its January and February requirements, it was planned to take up with the Interstate Commerce Commission and the R.F.C. prior to July 1, the matter of an additional loan to enable it to meet its requirements subsequent to June 20.

"In view of the uncertainties of the railroad situation and of the earnings of the company, the directors have decided no further loan should be sought from the R.F.C. except in connection with a plan for the reorganization of the capital structure of the company. The directors are giving consideration to such a plan and expect to have it available for the consideration of the R.F.C. and the security holders prior to July 1.

"In the meantime the directors have decided that the payment of $900,000 principal amount of equipment trust certificates, Series C, maturing April 1, should be deferred until plans have been further developed. The railroad company will pay the interest due on such certificates as well as other payments April 1."

Finds Co-ordinator Law a Hindrance to Progress

Pelley so characterizes it as he outlines program to meet railroad situation

John J. Pelley, president of the Association of American Railroads, addressing a luncheon of the New York State Chamber of Commerce, New York, on April 4, proposed a "three point program" to meet the railroad situation, as follows:

1. Withdraw the subsidies from other forms of transportation and regulate them on a basis comparable with the railroads.

2. Prevent the enactment of any legislation that increases the cost of railroad operation.

3. Discontinue the co-ordinator law and give the Association of American Railroads an opportunity to do for the rail carriers what can be done within the industry itself.

"With this three point program effective," said Mr. Pelley, "and with a return of anything like normal business conditions, the railroads again will give a good account of themselves from the standpoint of earnings and the effect on general business through their increased purchasing power.

"What is to be done about the depression, I leave to others. What is necessary to correct the railroad situation, as much as it can be corrected by public action, is to give them an equal opportunity to meet the competition they have. Our conception of equal opportunity is that highway and waterway operators be required to pay their way, and be regulated on a basis fairly comparable with rail regulation.

"There is much talk of what the railroads can do for themselves. The rail carriers admit there is considerable that can be done within the industry if they are given a free opportunity to do it.

"In 1933, the Emergency Transportation Act was passed, providing for a co-ordinator of transportation. The underlying thought in the conception of this law was that many economies can be brought about by closer co-operation of the railroads with one another. The reason for having the co-ordinator was to establish an authority to consummate co-ordination schemes about which there might be a difference of opinion and action among the railroads. In short, if savings could be effected by co-ordination and the railroads involved could not reach an agreement, the Co-ordinator was empowered to order what seemed to be in the interest of the railroads and the public.

"This law, as conceived and proposed, had the approval of the railroads, but the bill as originally proposed was not enacted and it was so amended in Congress that as finally enacted it really defeated its purpose. It was contemplated that unifications and co-ordination of service made under this law would be calculated to relieve a certain number of men from their jobs. The law, as enacted, however, provides that the railroads shall not have fewer men than they had in May, 1933, and that no employee shall be in a worse position as to compensation than he was in May, 1933. The purpose for which the law was created was defeated almost entirely by this provision.

"The law also provides that the co-ordinator shall make studies that might lead to economies or improvements in service and of general benefit to rail transportation. During his term of office, the co-ordinator has made several studies, all of which are receiving the consideration of the railroads. Many of them contain helpful suggestions and, in the end, they will be handled to a conclusion by the carriers with some profit. Largely on account of the labor provisions of the law, however, the results have been disappointing. The rail carriers now feel, as a matter of fact, that because of the labor provisions of the co-ordinator law, they are worse off than before it was enacted. Prior to its enactment, there was no restriction on co-ordination and much was accomplished by the railroads in that direction.

"Unless re-enacted, the co-ordinator law expires by limitation on June 16, 1935. The railroads are opposed to the continuation of the co-ordinator law. Very little can be accomplished under the law except studies, and they will have been made. The law is a real hindrance to progress in co-ordination and consolidations, and, besides, the rail carriers have a fundamental objection to a federal officer who has authority to exercise discretion in managerial functions without responsibility.

"Self-help for the railroads can be achieved through the Association of American Railroads, organized in the Autumn of 1934 very largely for the purpose of accomplishing the very things that the co-ordinator law was expected to do. It has authority to assume jurisdiction not only of disputes among carriers but to do everything for the industry and the general public interest that can be done within the industry itself. It is a bold experiment in co-operation in the face of a critical situation."

Briefs In Ex Parte 116

The Interstate Commerce Commission has extended to May 10 the period within which briefs may be filed in Ex Parte 116, the commission's inquiry into interterritorial rate bases.

Traffic Clubs to Meet at Virginia Beach

The semi-annual meeting of the Associated Traffic Clubs of America will be held at Virginia Beach, Va., on May 7-8, with the Norfolk-Portsmouth Traffic Club of Norfolk, Va., serving as the host.

House Committee to Hold Hearings on Reorganization Bill

The House judiciary committee has announced its intention to hold a hearing beginning on April 15 on the bill recommended by Co-ordinator Eastman to amend the provisions relating to railroad reorganizations in Section 77 of the bankruptcy law, which was introduced in the House by Chairman Sumners of the committee as H. R. 6249.

Proposes Revised Charges for Refrigeration Service

General readjustment recommended by I. C. C. Examiner Sharp in proposed report

A general revision of charges for refrigeration service under section 2 of the perishable protective tariff from Arizona and California to all destinations in the country, and for such service under section 4 of the tariff from and to all points in the country is recommended by Examiner F. L. Sharp of the Interstate Commerce Commission in a proposed report made public on April 1.

Under section 2 the carriers undertake for a stated charge to provide (1) so-called standard refrigeration which contemplates initial icing and reicing as required to final destination, and (2) the somewhat more restricted service provided for under rules 240, 242, 245, 247 and 249. Generally, the service under rules 240, 245, 247 and 249 contemplates initial icing only or initial icing and one reicing in transit. The present charges for this character of service are substantially less than the charges for standard refrigeration service. Rule 242 provides for the movement of vegetables, or vegetables mixed with other perishable freight, with ice in the body of the car, usually on top of the lading. Section 4 covers the so-called "cost of ice method" of refrigeration service, whereunder the carriers undertake to furnish ice in bunkers of refrigerator cars in accordance with shippers' instructions. The report does not propose any changes in the character of service under either section 2 or 4.

This report is the latest step in by far the most comprehensive investigation of refrigeration charges ever conducted by the commission. Prior to the hearings the commission's accountants conducted extensive examinations, particularly on the Santa Fe and the lines served by the Pacific Fruit Express Company, with a view to obtaining first hand information as to the costs of refrigeration service. The evidence thus gathered constitutes a substantial part of the record.

The report describes the elements entering into the furnishing of refrigeration service and sets forth the unit cost of each as determined from the evidence of record. Besides the average cost of ice for each state or group, the unit costs as found are as follows:

(1) Haulage of ice in bunkers of cars: 75 hundredths of one mill per ton mile.

(2) Switching: On the lines of the Santa Fe, Southern Pacific, Union Pacific, and Western Pacific railroad systems, 45 cents per icing; on the lines of other carriers in the territory west of the Mississippi River $1.05 per icing; on the lines of carriers in the territory east of the Mississippi River and north of the Ohio and Potomac rivers 75 cents per icing.

(3) Bunker repairs: $5 per car per trip.
(4) Damage to cars due to top and body icing: $5 per car per trip.
(5) Hazard: Apples and citrus fruits 16 cents, deciduous fruits and melons 21 cents, vegetables 31 cents, all per car per trip.
(6) Supervision: In the territory west of the Mississippi River 59 cents per icing, except at stations served by the Burlington Refrigerator Express Company and the Western Fruit Express Company, which companies may charge not to exceed $1.36 and $1.40 per icing, respectively; in the territory east of the Mississippi River and north of the Ohio River and the southern boundaries of West Virginia and Virginia 96 cents per icing; and in the territory east of the Mississippi River and south of the territory just described, 68 cents per icing.
(7) Station and auditor's accounting: 35 cents per car per trip.

The charges for standard refrigeration service and for service in accordance with rules 240, 242, 245, 247, and 249, as proposed in the report, represent the application of the unit costs to the elements embraced by the service in each case.

Section 4 charges at present are assumed to cover the cost of ice and the necessary switching, but are, in fact, the report says, less than the cost of ice alone in many instances. Other costs incident to the furnishing of section 4 refrigeration service are assumed to be covered by the applicable line-haul rates. The report proposes that section 4 charges shall be made to include all pertinent elements of cost, leaving to the line-haul rates only the transportation expense that would be incurred whether or not refrigeration service be furnished. This may require a readjustment of certain line-haul rates, to become effective at the time the increased section 4 charges become effective.

It is estimated that the proposed report would cause an average decrease in the charges under section 2, on traffic originating in Arizona and California, of approximately 10 per cent.

As previously indicated, the investigation covers the cost of section 4 service from and to all points in the country. The record does not show the details of movement of a sufficient number of shipments of the various commodities from and to widespread origin and destination points to admit of a close approximation of the effect of the proposed report upon the charges for this service. In every instance there would be an increase, but the range would be wide. It is estimated that the weighted average increase for the service as a whole would be approximately 50 per cent. A very substantial portion of the traffic moving under section 4 is initially iced by the shippers and requires a relatively small amount of reicing in transit. Likewise, if it be true that present line-haul rates cover a portion of the cost of section 4 service, the prospective increase in the cost of refrigeration service may be offset to some extent by readjustments in line-haul rates.

Senate Committee Considers Motor Carrier Bill

The Senate committee on interstate commerce took up the Eastman motor carrier bill in executive session on Saturday, March 30, and again on Wednesday of this week, going over various suggested amendments with Co-ordinator Eastman. The committee also planned to meet again to discuss the bill on Friday.

Pennsylvania Railroad Pensions

The number of pensioners on the rolls of the Pennsylvania at the end of 1934 was 11,172, an increase of 667 over the previous year. Of these pensioners, there is a group of 51, each of whom at the end of the year had attained the age of 90 or over; and another group consists of 49 men, each of whom had worked for the company 55 years when he retired. Joseph R. Jones, a former supervisor of signals, is now in his hundredth year.

N. Y. Railroad Club—Next Meeting Postponed to April 25

Because Good Friday this year falls on what would be the New York Railroad Club's regular April meeting date, the next meeting of the club has been postponed to the following Thursday, April 25, when it will be held at the usual place—the auditorium of the Engineering Societies building, 29 West Thirty-ninth street, New York. R. S. Binkerd, vice-president and director of sales of the Baldwin Locomotive Works, will speak in defense of the steam locomotive.

Effective Dates For Depreciation Order Again Postponed

On petition of certain railroads the Interstate Commerce Commission has again postponed until further order the effective dates specified for various requirements in its order of July 28, 1931, which directed the establishment of a new system of depreciation accounting. An exception is made as to the requirement of the filing of percentage rates for depreciation of equipment, which has already gone into effect. The commission has itself prescribed annual depreciation rates for various classes of equipment for 48 railroads, most of them short lines, based in large part upon data submitted by each road.

Another Pennsylvania Board

The seventh system board of adjustment has been established on the Pennsylvania; it is for the 3,000 signalmen, signal maintainers and helpers. There are now about 100,000 men, 85 per cent of the entire force, who are enrolled with these boards for adjusting differences by mutual conference. The present agreement is signed by Jesse Clark for the Brotherhood of Railroad Signalmen of America, and by four general managers for the railroad.

Great Lakes Regional Advisory Board

The Great Lakes Regional Advisory Board held its twelfth annual meeting at Cleveland, Ohio, on March 27, with an attendance of about 600. The expectations of the commodity committees are reported as follows: Automobiles, an increase of 12 per cent for the current quarter over 1934; lumber and forest products, 14 per cent; paper and paper products, 10 per cent. The total of all the commodity reports shows a probable increase of 7.6 per cent.

Speakers at the meeting included Prof. C. S. Dunford, Michigan State College; Fred M. Renshaw, president of the National Industrial Traffic League, and H. J. Zimmerman, of the B. F. Goodrich Company.

A. C. L. Employees Promote Public Relations Work

The Wilmington District Employees Service Club of the Atlantic Coast Line at Wilmington, N. C., is conducting an essay contest on the subject "What Does the Railroad Mean to Our City?" and is offering prizes aggregating $300 for the best essays. In all, 12 separate prizes are offered among six classes of contestants, including school students, adults and railroad employees. Advertisements announcing the contest have been published in local newspapers and 35,000 hand bills detailing its terms have been printed and distributed in the district.

I. C. C. Wants an Economist and an Analyst

The United States Civil Service Commission has announced competitive examinations, for applicants filing papers not later than April 29, for the positions of principal transportation economist and principal operating and cost analyst. These positions are open in the Bureau of Statistics in the Interstate Commerce Commission, and the entrance salary in each case is $5,600. Serving as examiners of the Civil Service Commission for these places will be Dr. M. O. Lorenz, Frederick W. Brown and Dr. M. A. Copeland. Education and experience of a high order are required, says the announcement.

Tax Burden on Virginia's Railways

Every fifth dollar of county and district taxes paid in Virginia comes from the railroads, Col. W. S. Battle, Jr., vice-president of the Norfolk & Western and chairman of the Virginia Railway Association, said on March 29 in a statement which revealed that during the seven-year period 1927 to 1933, inclusive, the Virginia railways paid more than $48,187,000 in local and state taxes.

Citing a specific instance of rail taxation, the N. & W. executive said that on one locomotive alone (in this case a Mallet) the railroads pay an annual tax of $700. This, he added, is 145 times as much as the average tax of $4.81 paid by 64,422 farms in Virginia. The statement set forth that of the $48,000,000 paid by the railroads in the state from 1927 to 1933, counties and districts received $15,703,529; cities, $7,500,855; towns, $968,268; and the state government, $24,015,000. The railways in 1932 paid from 30 to 43 per cent of the total county and district taxes in eighteen counties of the state.

Emphasizing the importance and size of railway taxes, Col. Battle declared that

"so far as the railroads generally are concerned the limit of expenses and taxes have been reached. The citizens of this state can do a great deal in preserving the revenues they now enjoy from the railroads by preventing any further increase in the railways' tax burden."

First-Run Movie Previewed on "400"

An innovation in railroad travel was tried for the first time by the Chicago & North Western, on March 27, when a preview of a first-run motion picture was presented to passengers and movie critics on the "400" as the train traveled from Chicago to Milwaukee, Wis. This is the first time a preview of a first-run picture has been held aboard a fast-moving train. The picture, The Whole Town's Talking, produced by the Columbia Pictures Corporation and shown for the first time in a Chicago theatre on March 30, was projected upon a screen installed at the head-end of a coach. A special portable film outfit, using current from the car generator and batteries, was installed for the trip by the Columbia Pictures Corporation.

Club Meetings

The Central Railway Club of Buffalo (N. Y.) will hold its next meeting at the Hotel Statler, Buffalo, on Thursday evening, April 11. W. C. Kendall, chairman of the car service division, A.A.R., will speak on efficiency in freight car handling.

T. E. McDonnell, president and general manager of the Canadian Pacific Express Company, was the principal speaker at the regular monthly meeting of the Toronto Railway Club which was held on April 5 at the Royal York Hotel in that city. Mr. McDonnell spoke on "Highway-Railway Co-ordination, Why or How."

R. R. Credit Corporation Has Returned 30 Per Cent

Through liquidating distributions since termination of its lending period on June 1, 1933, the Railroad Credit Corporation has returned $22,079,735 or 30 per cent of the net emergency freight revenues collected by it, according to report filed by the corporation with the Interstate Commerce Commission. Of the total amount returned, $9.793,916 has been in cash and $12,285,819 in credits on obligations due the corporation. The Railroad Credit Corporation, on March 31, made its fifteenth liquidating distribution to participating carriers. This distribution amounted to $726,391 or 1 per cent. Of the total amount, $351,351 was in cash and $375,040 in credits on carriers' obligations. Cash receipts in March totaled $543,942, of which $493,226 was in reduction of loans, $49,687 was interest on loans and $1,029 was from other sources.

Employment Created by Rail Purchases

Production of steel rails purchased in 1934 by railroad companies with P.W.A. loans provided 21,000,000 man-hours of indirect and industrial employment in all branches of the steel industry, in addition to 5,500,000 hours of direct employment given to railroad track forces called back to work to lay the rails, according to a report to Public Works Administrator Harold L. Ickes by the Bureau of Labor Statistics of the Department of Labor, which is making studies to determine the amount of indirect and industrial employment created by production of materials for use on P.W.A. projects.

P.W.A. loans to 19 roads for rail purchases resulted in the manufacture of 424,744 tons in 1934, or 16,500 tons more than the total rail production of the steel industry in 1933. A total of 1,007,746 tons of rail was rolled in 1934, according to trade records. Purchases financed by P.W.A. account for 42 per cent of the total rail production for 1934.

Manion Again Denies Merger Plan for Canada

A declaration from Hon. Robert J. Manion, Minister of Railways, that the present Government of Canada is not in favor of amalgamation of the Canadian Pacific and Canadian National and that such a transportation monopoly would be a "menace to the political and economic life of this nation" and the charge of Hon. James L. Ralston, former Liberal Cabinet Minister, that the Bennett Ministry was trying to run away from the railway problem or leave it on the doorstep of the nation were features of the Budget debate in the House of Commons at Ottawa last week. It is noteworthy that more than ever before the speeches in the House this session dealing with the financial condition of the country have stressed the financial burden which the operating deficits of the Canadian National impose upon the federal treasury.

Dr. Manion on the question of rumored amalgamation sought to spike stories circulated to the effect that even though the Bennett Government was talking against merging the two roads it was in fact planning it. He based most of his railway talk on a speech made recently in Toronto by Col. Straight, a Liberal party organizer, who said the Bennett Cabinet has completed plans for the merger. Col. Straight also sought to make it appear that the Dominion made a direct loan of $60,000,000 to the Canadian Pacific Railway, whereas it was only in the form of a government guarantee to the banks which made the loan.

Grade Crossing Accidents and Casualties Increase

An increase, compared with the preceding year, in the number of casualties resulting from accidents at highway-railroad grade crossings was shown in complete reports for the calendar year 1934 just received by the Safety Section of the Association of American Railroads. This showed that 1,554 persons lost their lives in highway-railroad grade crossing accidents in 1934, an increase of 43 compared with 1933, in which year fewer persons lost their lives in such accidents than in any similar period since 1916. This is the first increase in fatalities that has been reported since 1928, there having been, up to 1934, a reduction in the number of persons to lose their lives at highway-railroad grade crossings during four consecutive years.

Persons injured in such accidents in 1934 totaled 4,300, an increase of 603 compared with the number injured in 1933. During the past calendar year there were 4,128 accidents at highway-railroad grade crossings, an increase of 892 accidents over the number that took place in 1933.

Steam Railway Accident Statistics December, 1934

The Interstate Commerce Commission's completed statistics of steam railway accidents for the month of December, now in preparation for the printer, will show:

Item	Month of December 1934	Month of December 1933	12 Months Ended with December 1934	12 Months Ended with December 1933
Number of train accidents:				
Total	532	545	6,023	5,623
(At highway grade crossings, included in total)	22	13	169	129
Number of casualties in train, train-service and non-train accidents:				
Tre passers:				
Killed	150	194	2,654	2,826
Injured	164	197	3,156	3,997
Passengers on trains:				
Killed	...	1	27	38
Injured	212	199	1,870	1,972
Employees on duty:				
Killed	50	57	526	500
Injured	1,478	1,396	16,990	15,583
All other nontrespassers:*				
Killed	189	179	1,672	1,655
Injured	752	654	6,615	5,942
Total—All classes of persons:				
Killed	389	431	4,879	5,019
Injured	2,606	2,446	28,631	27,494

* Casualties to "Other nontrespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties *for all classes of persons, including both trespassers and nontrespassers*, were as follows:

Killed	177	171	1,554	1,511
Injured	525	451	4,300	3,697

Senate Committee Favors Investigation of Railroad Finances

A favorable report on Senator Wheeler's resolution proposing a thorough investigation by the Senate committee on interstate commerce into all phases of railroad financing was ordered by the committee at an executive meeting on March 29 by a vote of 12 to 5, after the resolution had been amended to authorize an expenditure of $25,000 for the purpose instead of $10,000 as originally proposed. Senator Wheeler said he would make every effort to have the resolution adopted by the Senate at an early date but that the investigation would be largely deferred until after the adjournment of Congress and that hearings in connection with it will probably not be held until next Fall. Thus it will not interfere with the consideration by the committee of the bills recommended by Co-ordinator Eastman, who had also favored the investigation resolution. Senator Wheeler also said that much of the work of the investigation would be done preliminary to the hearings by accountants of the Interstate Commerce Commission in co-operation with the Securities and Exchange Commission and the Reconstruction Finance Corporation.

Several members of the committee had objected to the idea of wording the resolution to imply a sweeping investigation of all railroads and much of the discussion in the executive session was centered

around the efforts to limit the inquiry to specific railroads. It is understood the vote against such a limitation was 11 to 7.

Regulation Must be Primarily in Public Interest

While co-ordination of railroad, motor truck and waterway freight transportation is desirable, it should not be expected that it alone will insure the preservation of railroads which otherwise could not withstand competition. This was the theme of Luther M. Walter of the law firm of Walter, Burchmore & Belnap, in an address given before the Traffic Club of Chicago on March 26. Co-ordination, said Mr. Walter, should be in the public interest, with all forms of transportation equally regulated and taxed. He was in favor of a single [federal] regulatory body with complete freedom from state interference. He would have motor truck operators and inland river lines required to obtain certificates of convenience and necessity and to pay reasonable tolls for their use of highways and waterways. He reminded railroad men and shippers of their duty to call on President Roosevelt to keep his pre-inauguration transportation pledges. Such action would produce a satisfactory setup, provided the government undertook the regulation of transportation labor as a balance against control of transportation enterprises.

Injunction Restraining Sale of Railroad Collateral Upheld by Highest Court

An injunction issued by the federal district court for the northern district of Illinois, on November 22, 1933, restraining the Reconstruction Finance Corporation and five banks from selling or otherwise disposing of collateral pledged by the Chicago, Rock Island & Pacific as security for loans on the ground that sale of the collateral would impede the orderly process of a reorganization of the Rock Island, was sustained by a unanimous decision of the Supreme Court of the United States on April 1. The decision of the highest court was rendered on an appeal from the circuit court of appeals for the seventh circuit, which had also sustained the action of the lower court, although the notes to the banks and the R.F.C. contained provision that they would become due in case of nonpayment of interest or insolvency of the debtor.

The collateral involved consisted of bonds of the debtor company and its subsidiaries, of a face value of $41,702,465 securing notes to the R.F.C. amounting to $13,659,877, and of a face value of $14,409,000 securing notes to the banks amounting to $4,125,000. The court said it was evident that the effect of the menace of impending sales of the collateral "would seriously embarrass and probably prevent the formulation and prevention of a plan of reorganization" and that the injunction issued goes no further than to delay the enforcement of the contract. "The preparation of any plan the important details of which could survive the changes in and the consequent fluctuation and disturbance of, the financial structure, brought about by recurring sales of collateral, would seem to be a practical impossibility," it said. "Under all the circumstances we are of opinion that the district court properly exercised its discretion in favor of respondents." On the other hand, the court said it was the duty of the court and of the Interstate Commerce Commission to see that the highest degree of diligence is exercised in carrying forward a plan of reorganization. The delay already, it said, is obviously due to the many doubts and uncertainties arising from the litigation, but "with those doubts and uncertainties now removed, the proceeding should go forward to completion without further delay, or be dismissed."

The R.F.C. had also contended that sections of the bankruptcy act must be limited by provisions of the R.F.C. act which empower the corporation to take over and liquidate collateral accepted by it as security, but the court held that the provisions of the bankruptcy act, which it found to be constitutional, are binding upon the R.F.C. as upon other corporations.

The Canadian Roads in February

The Canadian Pacific in February had gross revenues of $8,656,019 showing an increase of $85,504 over a year ago. Expenses rose by $53,880 to $7,805,874, the result being an increase in net from $818,520 to $850,144 this year.

For the two months ended with February, gross revenues totaled $16,922,663, as compared with $17,540,850 a year ago, a decrease of $618,186. Expenses increased by $34,864, the result being a reduction in net revenues from $1,707,509, 1934, to $1,054,458 this year.

Net operating revenue of the Canadian National all-inclusive system for February totaled $134,595, which contrasts with a deficit of $724,990 in February of last year, representing an improvement of $859,585.

February's gross operating revenues totaled $12,423,833, as compared with $11,525,217 in the corresponding month of last year. Operating expenses were $12,289,238 as compared with $12,250,207 in February, 1934, being an increase of $39,031.

For the first two months gross operating revenues totaled $24,534,119, being an increase of $1,446,325 over the similar period of last year. Operating expenses amounted to $25,143,178, an increase of $521,427 over January and February of last year. There was a net revenue deficit for the first two months of 1935 of $509,059, as compared with a deficit of $1,533,956 during the similar period of last year, leaving an improvement of $924,898.

Shippers Estimate Small Increase in Car Loading

Freight car loadings in the second quarter of 1935 are expected to be about one tenth of one per cent above actual loadings in the same quarter in 1934, according to estimates just compiled by the 13 Shippers' Regional Advisory Boards. On the basis of these estimates, freight car loadings of the 29 principal commodities would be 4,605,737 cars in the second quarter of 1935, compared with 4,603,241 actual loadings for the same commodities in the corresponding period last year. Eight of the 13 boards estimate an increase in the loadings for the second quarter of 1935 compared with the same period of 1934, while 5 estimate a decrease. Comparisons of the estimated freight car loadings for the second quarter of this year with the actual loadings of the same commodities in the same period one year ago show that for agricultural commodities reductions are anticipated but increases are expected in the loading of manufactured articles and raw materials. Car loadings of 12 agricultural commodities are expected to total 847,613 cars in the second quarter of 1935, or a decrease of 8.2 per cent under the same quarter in 1934. On the other hand, the estimated car loadings for 16 manufactured articles and raw materials excluding coal and coke, are expected to total 2,385,759 cars in the second quarter of this year or an increase of 6.5 per cent over the same period last year. For coal and coke only, a reduction of 4.7 per cent in the second quarter compared with the preceding year is estimated due to the uncertainty that exists in the bituminous coal regions over the wage situation. Estimates as to freight car loadings of coal and coke vary in various districts, one district, the Mid West, estimating a reduction of 50 per cent in such loadings.

Meetings & Conventions

The following list gives names of secretaries, date of next or regular meetings and places of meetings:

AIR BRAKE ASSOCIATION.—T. L. Burton, Room 3400 Empire State Bldg., New York, N. Y.

ALLIED RAILWAY SUPPLY ASSOCIATION.—F. W. Venton, Crane Company, 836 S. Michigan Ave., Chicago, Ill. To meet with Air Brake Association, Car Department Officers' Association, International Railroad Master Blacksmiths' Association, International Railway Fuel Association, International Railway General Foremen's Association, Master Boiler Makers' Association and the Traveling Engineers' Association.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—W. R. Curtis, F. T. R., M. & O. R. R., Chicago, Ill.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. L. Duncan, 816 McCormick Bldg., Chicago, Ill. Annual meeting, September 17, 1935, Toronto, Ontario, Canada.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York, N. Y.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—F. O. Whiteman, Union Station, St. Louis, Mo. Annual meeting, June 18-20, 1935, Hotel Sherman, Chicago, Ill.

AMERICAN ASSOCIATION OF RAILWAY ADVERTISING AGENTS.—E. A. Abbott, Poole Bros., Inc., 85 W. Harrison St., Chicago, Ill.

AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—F. R. Borger, C. I. & L. Ry., 836 S. Federal St., Chicago, Ill. Annual meeting, San Francisco, Cal.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATIONS.—C. A. Lichty, C. & N. W. Ry., 319 N. Waller Ave., Chicago, Ill. Annual meeting, October 15-17, 1935, Hotel Stevens, Chicago, Ill. Exhibit by Bridge and Building Supply Men's Association.

AMERICAN RAILWAY CAR INSTITUTE.—W. C. Tabbert, 19 Rector St., New York, N. Y.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—E. H. Gurton, Mgr., Land Settlement and Development, C. N. R., St. Paul, Minn.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in co-operation with the Association of American Railroads, Division IV.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 10-12, 1936, Palmer House, Chicago, Ill.

AMERICAN RAILWAY MAGAZINE EDITORS' ASSOCIATION.—John Ferrick, Missouri Pacific Lines Magazine, 2108 Missouri Pacific Lines Bldg., St. Louis, Mo.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C. M. St. P. & P. R. R., 11402 Calumet Ave., Chicago, Ill.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—R. E. Schindler, Union Trust Bldg., Washington, D. C.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—29 W. 39th St., New York, N. Y. Railroad

Division. — Marion B. Richardson, 192 E. Cedar St., Livingston, N. J. Spring meeting, June 19-21, 1935, Hotel Gibson, Cincinnati, Ohio.

AMERICAN TRANSIT ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York, N. Y.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—H. L. Dawson, 1427 Eye St., N. W., Washington, D. C. Annual meeting, 1936, Memphis, Tenn.

ASSOCIATION OF AMERICAN RAILROADS.—H. J. Forster, Transportation Bldg., Washington, D. C.

Operations and Maintenance Department.—J. R. Downes, Vice-President, Transportation Bldg., Washington, D. C.

Division I.—Operating.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Freight Station Section.—R. O. Wells, Freight Agent, Illinois Central Railroad, Chicago, Ill. Annual meeting, June 18-20, 1935, Chicago, Ill.

Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York, N. Y. Annual meeting, June 10-11, 1935, Chalfonte-Haddon Hall, Atlantic City, N. J.

Protective Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Safety Section.—J. C. Caviston, 30 Vesey St., New York, N. Y. Annual meeting, October 15-17, 1935, Louisville, Ky.

Telegraph and Telephone Section.—W. A. Fairbanks, 30 Vesey St., New York, N. Y. Annual meeting, June 25-27, 1935, Hotel Stevens, Chicago, Ill.

Division II.—Transportation.—G. W. Covert, 59 E. Van Buren St., Chicago, Ill.

Division IV. — Engineering. — E. H. Fritch, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 10-12, 1936, Palmer House, Chicago, Ill.

Construction and Maintenance Section.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill.

Electrical Section.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill.

Signal Section.—R. H. C. Balliet, 30 Vesey St., New York, N. Y.

Division V.—Mechanical.—V. R. Hawthorne, 59 E. Van Buren St., Chicago, Ill. Next meeting, June, 1935, Chicago, Ill.

Division VI.—Purchases and Stores.—W. J. Farrell, 30 Vesey St., New York, N. Y.

Division VII.—Freight Claims.—Lewis Pilcher, 59 E. Van Buren St., Chicago, Ill.

Division VIII. — Motor Transport. — George M. Campbell, Transportation Bldg., Washington, D. C.

Car-Service Division.—C. A. Buch, Transportation Bldg., Washington, D. C.

Traffic Department.—A. F. Cleveland, Vice-President, Transportation Bldg., Washington, D. C.

Finance, Accounting, Taxation and Valuation Department.—E. H. Bunnell, Vice-President, Transportation Bldg., Washington, D. C.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—F. L. Johnson, Chief Clerk and Claim Agent, General Claims Dept., Alton R. R., 340 W. Harrison St., Chicago, Ill. Annual meeting, May 15-17, 1935, Hotel Biltmore, New York, N. Y.

ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W., 1519 Daily News Bldg. 400 W. Madison St., Chicago, Ill.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—L. F. Flanagan, Detroit Graphite Company, Room 1158, 20 N. Wacker Drive, Chicago, Ill. Meets with American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB.—C. R. Crook, 2276 Wilson Ave., N. D. G., Montreal, Que. Regular meetings, second Monday of each month, except June, July and August, Windsor Hotel, Montreal, Que.

CAR DEPARTMENT OFFICERS' ASSOCIATION.—A. S. Sternberg, M. C. B. Belt Ry. of Chicago, 7926 S. Morgan St., Chicago, Ill.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—G. K. Oliver, 2514 W. 55th St., Chicago, Ill. Regular meetings, second Monday of each month, except June, July and August, La Salle Hotel, Chicago, Ill.

CAR FOREMEN'S ASSOCIATION OF LOS ANGELES.—J. W. Krause, Room 299, 610 S. Main St., Los Angeles, Cal. Club not active at present.

CAR FOREMEN'S ASSOCIATION OF ST. LOUIS, MO.—E. G. Bishop, Illinois Central R. R., East St. Louis, Ill.

CENTRAL RAILWAY CLUB OF BUFFALO.—M. D. Reed, 1817 Hotel Statler, McKinley Square, Buffalo, N. Y. Regular meetings, second Thursday of each month, except June, July and August, Hotel Statler, Buffalo, N. Y.

CINCINNATI RAILWAY CLUB.—D. R. Boyd, 2920 Utopia Place, Hyde Park, Cincinnati, Ohio. Operation suspended indefinitely.

CLEVELAND RAILWAY CLUB.—F. L. Frericks, 14416 Alder Ave., Cleveland, Ohio. Meetings temporarily suspended.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich.

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—T. D. Smith, 1660 Old Colony Bldg., Chicago, Ill.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1061 W. Wabasha St., Winona, Minn.

MASTER BOILER MAKERS' ASSOCIATION.—A. F. Stiglmeier, 29 Parkwood St., Albany, N. Y.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—Clyde S. Bailey, Washington, D. C. Annual meeting, October 15-18, 1935, Nashville, Tenn.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. W. Kelly, Suite 322, 910 S. Michigan Ave., Chicago, Ill. Exhibit at A. R. E. A. Convention.

NATIONAL SAFETY COUNCIL.—Steam Railroad Section (see Safety Section, Association of American Railroads).

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September, Copley-Plaza Hotel, Boston, Mass.

NEW YORK RAILROAD CLUB.—D. W. Pye, 30 Church St., New York, N. Y. Regular meetings, third Friday of each month, except June, July and August, 29 W. 39th St., New York, N. Y.

PACIFIC RAILWAY CLUB.—William S. Wollner, P. O. Box 3275, San Francisco, Cal. Regular meetings, second Thursday of each month, alternately at San Francisco and Oakland, excepting July at Los Angeles and October at Sacramento.

RAILWAY ACCOUNTING OFFICERS' ASSOCIATION.—(Merged with Association of American Railroads.)

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton (Treas. and Asst. Sec.), First National Bank Bldg., Chicago, Ill. Annual meeting, November, 1935, Hotel Stevens, Chicago, Ill.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 1941 Oliver Bldg., Pittsburgh, Pa. Regular meetings, fourth Thursday of each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—Edward Wray, 9 S. Clinton St., Chicago, Ill. Meets with Association of Railway Electrical Engineers.

RAILWAY FIRE PROTECTION ASSOCIATION.—R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1941 Oliver Bldg., Pittsburgh, Pa. Meets with Mechanical Division, Purchases and Stores Division, and Motor Transport Division, Association of American Railroads.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with Telegraph and Telephone Section of A. A. R., Division I.

RAILWAY TIE ASSOCIATION.—A. S. Fathman, Railway Exchange Bldg., St. Louis, Mo. Annual meeting, May 15-17, 1935, St. Louis, Mo.

RAILWAY TREASURY OFFICERS' ASSOCIATION.—L. W. Cox, 1428 Broad Street Station Bldg., Philadelphia, Pa.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—T. F. Donahoe, Gen. Supvr. Road, Baltimore & Ohio, Pittsburgh, Pa. Annual meeting, September 17-19, 1935, Hotel Stevens, Chicago, Ill.

SIGNAL APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with A. A. R., Signal Section.

SOCIETY OF OFFICERS, UNITED ASSOCIATIONS OF RAILROAD VETERANS.—M. W. Jones, Baltimore & Ohio, Mt. Royal Station, Baltimore, Md. Annual meeting, October 5-6, 1935, Cincinnati, Ohio.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, 4 Hunter St., S. E., Atlanta, Ga. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta, Ga.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—R. G. Parks, A. B. & C. R. R., Atlanta, Ga.

TOOL FOREMEN SUPPLIERS' ASSOCIATION.—E. E. Caswell, Union Twist Drill Co., 11 S. Clinton St., Chicago, Ill. Meets with American Railway Tool Foremen's Association.

TORONTO RAILWAY CLUB.—R. H. Burgess, P. O. Box 8, Terminal "A," Toronto, Ont. Regular meetings, first Friday of each month, except July, August and September, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION. — D. J. Higgins, Gardner-Denver Company, 332 S. Michigan Ave., Chicago, Ill. Meets with Roadmasters' and Maintenance of Way Association.

TRAVELING ENGINEERS' ASSOCIATION. — W. O. Thompson, 1177 E. 98th St., Cleveland, Ohio.

WESTERN RAILWAY CLUB.—C. L. Emerson, C. M. St. P. & P., Chicago, Ill. Regular meetings, third Monday of each month, except June, July, August and September, Hotel Sherman, Chicago, Ill.

Equipment and Supplies

FREIGHT CARS

THE FISHER BODY CORPORATION is having 100 box cars of 50 tons' capacity built in the shops of the Merchants Despatch.

PASSENGER CARS

THE ERIE has ordered 55 milk car bodies of 40 tons' capacity from the Greenville Steel Car Company. Inquiry for this equipment was reported in the *Railway Age* of March 9.

THE NEW YORK RAPID TRANSIT COMPANY, (B. M. T.) has requested the Transit Commission to approve proposed orders for 25 articulated five-section train units for service on its elevated and subway lines as follows: To the Pullman-Standard Car Manufacturing Company, 15 units, and to the St. Louis Car Company, 10 units. Inquiry for this equipment was reported in the *Railway Age* of February 9.

IRON AND STEEL

NEW YORK, NEW HAVEN & HARTFORD.—This company has received bids on 750 tons of steel for grade crossing elimination work at Hartford, Conn.

THE CHICAGO GREAT WESTERN has ordered 5,000 tons of rails, placing 4,000 tons with the Illinois Steel Company and 1,000 tons with the Inland Steel Company.

THE UNION PACIFIC has ordered 19,500 tons of rails, placing 8,580 tons with the Illinois Steel Company, 2,340 tons with the Inland Steel Company and 8,580 tons with the Colorado Fuel & Iron Company.

AIR CONDITIONING

THE PENNSYLVANIA has given a contract to the Gould Storage Battery Corporation, Depew, N. Y., for 34 sets of 500-ampere-hour batteries to be used in connection with that road's present air-conditioning program. These are Dreadnaught type LMAC-21.

THE BALTIMORE & OHIO will add to its air-conditioning equipment this season 118 cars, bringing the total number of air-conditioned cars in B. & O. service to 401, including 31 on its subsidiary, the Alton. These additional air-conditioned cars will enable the company to operate practically all its long-distance trains thus equipped throughout. The installation on both B. & O. and Pullman cars involved is to be of B. & O. standard for air-conditioning equipment, to be manufactured by the York Ice Machinery Corporation, York, Pa., Fairbanks, Morse & Company, Chicago, and others, and is being installed by the railroad's forces at its shops at Mount Clare, Baltimore, Md.; Washington, Ind., and Bloomington, Ill.

Supply Trade

J. C. Ogden, who has been elected president of the **Robert W. Hunt Company,** Chicago, with headquarters at New York, entered the employ of Robert W. Hunt & Co., in 1900, as an inspector of

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J. C. Ogden

structural steel. He was made manager of the New York office in 1906, and when the Robert W. Hunt Company was incorporated in 1923 he was elected a director and made eastern manager. In October, 1930, he was elected vice-president, which position he has held until his recent election as president. **F. M. Randlett,** who has been appointed vice-president, with headquarters at Chicago, graduated from Tufts College in 1897, and during the next three years was employed as a teacher and in the engineering department of the New York, New Haven & Hartford. From 1900 to 1903, he was an engineer for Stone & Webster, while during the following year he occupied a similar position with the Massachusetts Electrics Company at Boston, Mass. From 1905 to 1906, he was an engineer for Warren Brothers at Bos-

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F. M. Randlett

ton and the Warren Construction Company at Portland, Ore. In the latter year he was appointed assistant chief engineer of the water department of Portland, Ore., which position he held until 1917, when he was promoted to chief engineer. He held the latter position until 1925, when he entered the employ of the Robert W. Hunt Company, being located at Chicago and later at Portland. In 1926, he was appointed Pacific Coast manager at San Francisco, Cal., which position he has held until his recent election as vice president, with headquarters at Chicago.

M. H. Merrill, a consulting engineer at San Francisco, Cal., has been appointed western manager at San Francisco, to succeed Mr. Randlett. Mr. Merrill graduated from Tufts College in 1896. He has been employed by a number of utility companies, serving two years with the Boston Elevated Company, four years with the Edison Illinois Electric Company, seven years with the Westinghouse Electric & Manufacturing Company, three years with the Allis-Chalmers Manufacturing Company and seven years as vice-president in charge of operation of a group of eastern utilities. In 1919, he became a partner in Merrill, Sweeney & Company, consulting engineers at Boston, and in 1921 acquired Mr. Sweeney's interest and specialized in utility and industrial work. In 1924, he located in San Francisco and for the past three years has acted as consultant for the Robert W. Hunt Company.

L. B. Armstrong, vice-president of **The Lundie Engineering Corporation,**

L. B. Armstrong

Chicago, has been elected president of the corporation with headquarters at New York, to succeed **Eugene Brandeis,** who has severed his connection with the corporation. Mr. Armstrong was born at Lauderdale, Miss. He began his railway work in 1905 with the Louisville & Nashville, serving in various capacities in the operating department, until March, 1908. The following month he went with the Birmingham Southern, a subsidiary of the United States Steel Corporation, at Birmingham, Ala., where he served in various capacities. Mr. Armstrong joined The Lundie Engineering Corporation in April, 1920. In May, 1923, he was promoted to western manager at Chicago and in March, 1931, was elected vice-president, which position he held until his recent promotion.

A. B. Wegener, secretary-treasurer of the **Camel Company** and the **Camel Sales Company,** Chicago, has resigned effective March 31. Mr. Wegener was born in St. Paul, Minn., and entered the employ of the American Bridge Company, with headquarters at Chicago, in 1900. He held various positions with this company until 1908, when he was promoted to credit manager, which position he held until 1912. In the latter year he entered the employ of the Camel Company as a salesman, with headquarters at Chicago, which position he held until January 1, 1916, when he was promoted to general manager of sales. He held this position until

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A. B. Wegener

1917, when he was promoted to secretary, which position he held until April, 1923, when he was made secretary-treasurer. In 1926, when the Camel Sales Company was organized, he was also appointed secretary-treasurer of this company.

Charles B. Nolte, who has been elected president of the **Crane Company,** Chicago, was graduated from the University of Illinois in 1909, and soon after entered the employ of Robert W. Hunt & Co., Chicago. He served as inspecting and testing engineer in various departments of this company until 1913, when he was appointed manager of the railway materials, inspection and testing department. In 1919 he was appointed assistant to the president and in 1923, when the company was incorporated under the name of the Robert W. Hunt Company, he was elected

Charles B. Nolte

vice-president and general manager. In October, 1930, he was elected president and general manager, which position he has held until his recent election.

Walter E. Barnes, assistant to general manager of sales of the **Lukens Steel Company,** Coatesville, Pa., has been ap-

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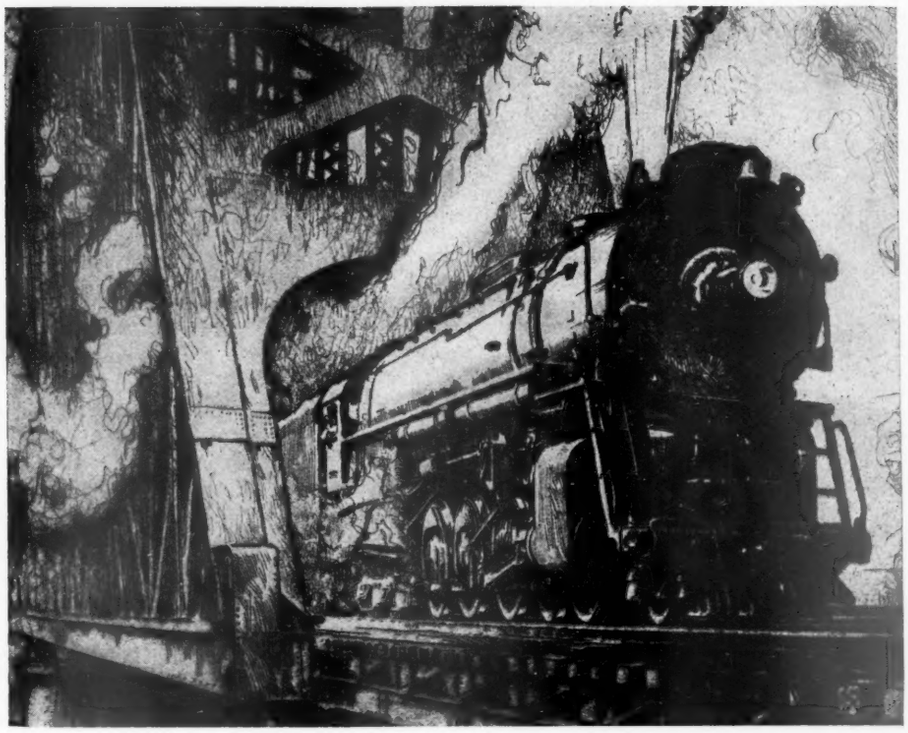

POWER

Power is what you buy in a locomotive.

Plot your power requirements for any given service, and you will find that steam best meets your needs.

Maximum power at any required speed, with unequalled flexibility in operation, may be purchased cheaper in steam than in any other form of prime mover.

LIMA LOCOMOTIVE WORKS INCORPORATED

LIMA LOCOMOTIVE WORKS, INCORPORATED, LIMA, OHIO

pointed assistant to vice-president in charge of sales. Mr. Barnes joined the Lukens organization in 1910. He spent six years in the mills as scale weigher, marker, layerout and recorder. In 1916, he was transferred to the order depart-

Walter E. Barnes

ment, and, in 1927, to the sales department. Subsequently, he was appointed manager of claims and then assistant to general manager of sales, in which capacity he served until his recent appointment.

Thomas Prosser & Son, New York, importers and distributors of Widia Cemented Carbides, has opened a new office at 7310 Woodward avenue, Detroit, Mich. **E. R. S. Reeder** is district manager, in charge of the new office.

The Worthington Pump & Machinery Corporation, Harrison, N. J., has created the Eastern Oil Power division which will cover its Diesel and gas engine lines in the Eastern district, under the field management of **Ray L. Howes,** with headquarters at 2 Park avenue, New York.

William R. Mattson, formerly assistant to the president of Babson Institute, engaged for 16 years in various phases of analytical work and in direction of advertising with that company, has joined the **American Locker Company, Inc.,** with headquarters at 24 Federal street, Boston, Mass., as vice-president in charge of research and publicity. Mr. Mattson is a graduate of Massachusetts Institute of Technology. He will specialize in analyses of parcel checking problems of transportation companies, as well as general publicity for the American Locker Company.

Albert C. Lehman, president of the **Blaw-Knox Company,** Pittsburgh, Pa., has been elected to the newly created office of chairman of the board in appreciation of his 30 years of service to the company since its inception; **Irvin F. Lehman,** vice-president, who has also been associated with the company since its early days, has been elected president and **Frank Cordes** was made senior vice-president.

The Weyerhaeuser Pole Company, Minneapolis, Minn., has been organized to deal in the purchase, development and distribution of poles, piling and other round timber products, and thus take over pole and piling activities from the Weyerhaeuser Sales Company which has previously been a factor in the sale and distribution of these products. **R. V. Clute,** manager of the pole and piling division of the Weyerhaeuser Sales Company, is vice-president and a director of the new company and will be in charge of the general sales office.

The American Engineering Company, Philadelphia, Pa., has established a new district office in the Keyser building, Calvert and Redwood streets, Baltimore, Md., in charge of **William M. Chatard** to handle future sales of all Taylor stoker equipment for Baltimore, Md., and Washington, D. C. territories.

Armand H. Peycke, who has been in charge of the spring and brake beam departments of the **American Steel Foundries,** Chicago, has been elected vice-president. He is a graduate of Massachusetts Institute of Technology and has been associated with the company since 1912. He will continue as president of the Damascus Brake Beam Company, with headquarters at Chicago.

Air Reduction Company

Net earnings of $4,145,416, after depreciation and all other operating reserves including Federal taxes, were reported by the Air Reduction Company for the year ended December 31, 1934. This compares with 1933 net earnings of $3,192,732.

Last year's net was equivalent to $4.98 per share on the 832,365-32/75 shares of common stock outstanding on December 31 and compares with 1933 earnings of $3.79 per share on 841,288-3/5 shares outstanding at the close of that year. The balance sheet lists total current assets of $16,431,787 as compared with total current liabilities of $1,971,508. Cash alone among the current assets totaled $6,991,759.

The summary of consolidated net income for the year ended December 31, 1934, follows:

Gross Sales, less discounts, returns and allowances	$16,170,609	
Operating expenses (including depreciation $1,424,098)	11,873,619	
Net operating income		$4,296,990
Other income (less income charges $74,499)		496,642
Net Income before estimated Federal taxes		$4,793,632
Estimated Federal taxes		648,216
Net Income Earned on Outstanding Stock		$4,145,416

Capital Stock Outstanding (less $8,923^{13}/_{75}$ shares held in Treasury)—$832,365^{32}/_{75}$ shares without par value.

Equity in undistributed net earnings for year 1934 of companies more than 50% owned, but not consolidated—$104,716.

OBITUARY

George Nibbe, special representative of the Inland Steel Company, died suddenly on April 3.

TRADE PUBLICATION

TWO-STAGE, AIR-COOLED PORTABLE COMPRESSORS.—The Ingersoll-Rand Company, 11 Broadway, New York, has issued a 56-page bulletin, No. 1604-E, which describes and illustrates its two-stage, air-cooled portable air compressors and its complete line of pneumatic tools for use with these compressors.

Construction

CENTRAL OF NEW JERSEY.—This company received bids on April 5 for the construction on the New York & Long Branch of the three-span, skew highway bridge, 118 ft. long with a 20-ft. roadway and concrete abutments and steel girders and floorbeams, at Laurence Harbor, N. J., to cost about $21,700. See *Railway Age* November 17, 1934, page 628.

MISSOURI-KANSAS-TEXAS.—A contract has been awarded to the Manhattan Construction Company, Muskogee, Okla., for the construction of a two-story steel-frame addition to this company's freight house at that point. The addition, which will be 54 ft. 9 in. by 150 ft., will cost about $27,000, including the necessary track changes.

PENNSYLVANIA.—The United States Engineer office, Zanesville, Ohio, has awarded a contract to the George W. Condon Company, Omaha, Neb., for the relocation of about 5½ miles of the Tuscarawas branch of the Pennsylvania in the vicinity of the Dover reservoir, Dover, Ohio. The relocation work, which will cost about $242,000, will involve about 530,000 cu. yd. of grading, and the placing of 3,640 cu. yd. of concrete, about 55,500 lb. of structural steel, 2,000 lb. of cast iron pipe culverts, and about 900 lin. ft. of vitrified pipe drain.

TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS.—The City of St. Louis, Mo., and the Terminal Railroad Association of St. Louis have reached an agreement providing for the construction of three additional approaches to the St. Louis municipal bridge across the Mississippi river between St. Louis and East St. Louis, Ill. Under the agreement the terminal association will construct the three approaches at an estimated cost of $750,000, for which expenditure it will be reimbursed out of tolls paid to the city for the use of the railroad deck of the bridge. In accordance with the original agreement of 1930, the Association guarantees to pay at least $500,000 annually in tolls to the city. By coming to the latest agreement with the association, the city automatically rejects the offer of the Public Works Administration for a loan and grant of $1,103,000 for the completion of the bridge approaches, although it may seek a much smaller grant to cover the cost of completing the work.

UNION PACIFIC.—Bids have been requested by this company for the construction of nearly 12 miles of new line and about two miles of side tracks between Desert Mound, Utah, and Iron Mountain. The new line, which will cost about $300,000, is being constructed to give the Columbia Steel Company additional facilities in reaching its ore deposits. It will connect with the Cedar City (Utah) branch of the Union Pacific. Bids will be opened on April 15.

This company has awarded a contract to the Allen Ice Machine Company, Omaha, Neb., for the installation of an air-conditioning system in the restaurant at the Omaha Union station.

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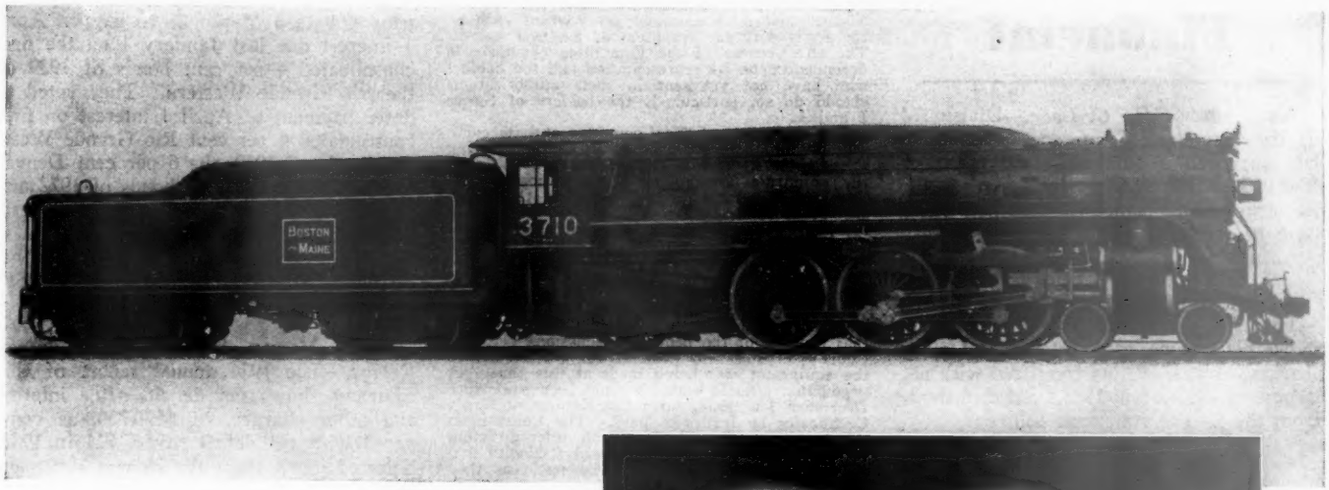

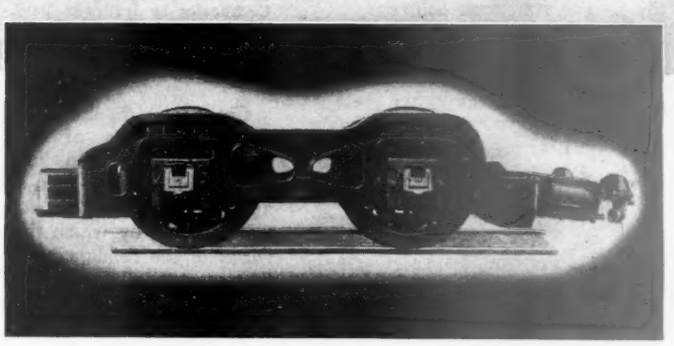

HEAVY TRAINS

Move faster and smoother with the BOOSTER

On the streamlined Pacifics for the Boston and Maine recently delivered by Lima Locomotive Works, Incorporated, The Locomotive Booster was incorporated in the original design.

Addition of The Booster increases the tractive effort in starting, in accelerating to road speeds and over the hard pulls from 40,900 pounds to 52,800 pounds.

This extra tractive effort makes for smooth starting and quick acceleration. It materially aids in maintaining fast schedules.

Wherever passenger comfort with heavy trains and high speeds is involved, The Locomotive Booster is a valuable operating factor. It capitalizes idle weight and spare steam.

All replacement parts furnished by Franklin Railway Supply Company are identical as to materials, design, clearances and workmanship with the parts they replace. They guarantee the same unfailing reliability of service.

FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK CHICAGO MONTREAL

Financial

ANN ARBOR.—*R.F.C. Loan.*—Division 4 of the Interstate Commerce Commission has approved a three-year extension of $600,000 of the receivers' loan from the Reconstruction Finance Corporation, which is to be reduced from $634,757 by a cash payment.

BANGOR & AROOSTOOK.—*Annual Report.*—The 1934 annual report of this company shows net income, after interest and other charges, of $947,393, as compared with net income of $993,576 in 1933. Selected items from the income statement follow:

	1934	1933	Increase or Decrease
RAILWAY OPERATING REVENUES	$6,167,890	$5,805,511	+$362,378
Maintenance of way	1,081,398	902,177	+179,221
Maintenance of equipment	1,034,966	996,079	+38,886
Transportation	1,428,004	1,289,200	+138,804
TOTAL OPERATING EXPENSES	3,926,030	3,526,442	+399,587
Operating ratio	63.65	60.74	+2.91
NET REVENUE FROM OPERATIONS	2,241,860	2,279,069	−37,209
Railway tax accruals	528,652	517,857	+10,794
Railway operating income	1,712,776	1,760,346	−47,569
Hire of freight cars —Dr.	912	6,593	−5,681
Non-operating income	50,343	65,620	−15,277
GROSS INCOME	1,763,119	1,825,966	−62,846
Interest on funded debt	783,028	800,151	−17,123
TOTAL DEDUCTIONS FROM GROSS INCOME	32,126	32,177	−50
NET INCOME	$947,393	$993,576	−$46,182

CHICAGO & NORTH WESTERN.—*Abandonment.*—The Interstate Commerce Commission has authorized this company to abandon its line extending from Yankton, S. Dak., to Mission Hill, 5.2 miles, and the Great Northern to abandon its line extending from Mission Hill to Volin, 5.3 miles, and for the two roads to operate under trackage rights over the segments of each other's line paralleling the segments of their own line which will be abandoned.

CHICAGO, BURLINGTON & QUINCY.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon its branch line from Clarinda, Ia., to Norwich, 13.5 miles.

CHICAGO, ROCK ISLAND & PACIFIC.—*Equipment Trust Certificates.*—A committee representing the holders of equipment trust certificates of this company, series I, L, M, N, O, P and Q, have addressed a communication to the holders of these certificates reading in part as follows:

The Committee is glad to be able to report that as of this date it holds signed authorizations from the owners of in excess of $20,600,000 out of the principal amount of $30,833,000 outstanding equipment trust certificates. Such authorizations constitute in the aggregate in percentage more than 66⅔ per cent of the outstanding certificates and more than 60 per cent of each of the series with the exception of Series I and L. The effectiveness of the Committee obviously is dependent upon its representation and the holders who have not yet sent in their authorizations should do so, particularly the holders of Series I and L.

The Chairman of the Committee and its counsel appeared before the Court in Chicago having this matter in charge today, March 27th, upon the adjourned hearing of the Petition of the Trustees that until further order of the Court the Trustees be authorized merely to pay the dividend warrants upon the certificates and to make no rental payments on account of the matured principal installments. The Court was informed by the representatives of your committee that it was not only desirable but essential that some proper action be taken with respect to the matured principal installment rentals. They stated that in view of the pending discussions with the Court's Trustees no demand for the return of the equipment was being made at this time, but urged that interest which has not been paid since December 1st, 1934, upon the Equipment Trust Certificates be forthwith paid. The Court upon this hearing made and entered an order directing that all past due interest be paid forthwith and that future interest payments be made as they mature.

COLORADO & SOUTHERN. — *Bonds.* — Chairman Jones of the Reconstruction Finance Corporation has announced that an agreement has been made, subject to approval by the Interstate Commerce Commission, by which the R.F.C. will underwrite the refinancing of $28,978,000 of first mortgage bonds which mature May 1. The holders will be given the option of taking new ten-year bonds or cash and the R.F.C. will take such portion of the bonds as are not taken in exchange by the holders. The Colorado & Southern and the Chicago, Burlington & Quincy are to deposit as additional collateral $11,500,000 par value of securities.

DELAWARE & HUDSON.—*Annual Report.*—The 1934 annual report of this company shows net deficit, after interest and other charges, of $2,601,062, as compared with net deficit of $3,699,771 in 1933. Selected items from the income statement follow:

	1934	1933	Increase or Decrease
RAILWAY OPERATING REVENUES	$23,196,312	$22,205,142	+$991,170
Maintenance of way	3,392,619	3,241,904	+150,715
Maintenance of equipment	5,595,043	5,970,609	−375,566
Transportation—Rail	8,979,787	8,907,429	+72,357
TOTAL OPERATING EXPENSES	20,447,906	20,367,286	+80,619
Operating ratio	88.15	91.72	−3.57
NET REVENUE FROM OPERATIONS	2,748,405	1,837,855	+910,550
Railway tax accruals	850,052	947,335	−97,282
Hire of freight cars —Cr.	256,562	158,450	+98,111
NET RAILWAY OPERATING INCOME	2,065,120	952,025	+1,113,094
Non-operating income	189,428	221,015	−31,586
GROSS INCOME	2,254,548	1,173,040	+1,081,508
Rent for leased roads	1,836,590	1,819,488	+17,101
Interest on funded debt	2,912,525	2,868,878	+43,646
TOTAL DEDUCTIONS FROM GROSS INCOME	4,855,611	4,872,812	−17,200
NET DEFICIT	$2,601,062	$3,699,771	−$1,098,708

DENVER & RIO GRANDE WESTERN.—*To Pay Interest.*—The directors of this company voted on March 28 to pay on April 1 interest due last January 1 on the first consolidated 4 per cent bonds of 1939 of the Rio Grande Western. They voted to defer payment of April 1 interest on first consolidated 4 per cent Rio Grande Western bonds of 1949, the 6 per cent Denver & Rio Grande Western bonds of 1972 and the 5 per cent Denver & Rio Grande Western bonds of 1978.

GREAT NORTHERN.—*Abandonment.*—See Chicago & North Western.

GULF, MOBILE & NORTHERN.—*Annual Report.*—The 1934 annual report of this company shows net deficit, after interest and other charges, of $170 739, as compared with net deficit of $55,711 in 1933. Selected items from the income statement follow:

	1934	1933*	Increase or decrease
Average mileage operated	961.52	975.83	−14.31
RAILWAY OPERATING REVENUES	$5,230,957	$5,024,203	+$203,753
Maintenance of way	677,681	543,321	+134,359
Maintenance of equipment	772,423	719,047	+53,376
Transportation	1,619,844	1,505,353	+114,490
TOTAL OPERATING EXPENSES	3,785,019	3,389,212	+395,806
NET REVENUE FROM OPERATIONS	1,445,938	1,634,991	−189,053
Railway tax accruals	352,000	365,400	−13,400
Equipment rents—Net	302,475	263,891	−38,584
Joint facility rents —Net	278,596	257,415	−21,180
NET RAILWAY OPERATING INCOME	512,546	747,432	−234,885
Non-operating income	117,506	126,279	−8,772
GROSS INCOME	630,053	873,711	−243,658
Rent for leased roads	263,400	154,047	+109,352
Interest on funded debt	519,399	746,181	−226,781
TOTAL DEDUCTIONS FROM GROSS INCOME	800,792	929,423	−128,630
NET DEFICIT	$170,739	$55,711	−$115,027

* For comparative purposes operations of the New Orleans Great Northern R. R. included.

ILLINOIS CENTRAL.—*Annual Report.*—The 1934 annual report of this company shows deficit, after interest and other charges, of $2,964,646, as compared with net income of $158,901 in 1933. Selected items from the income statement follow:

	1934	1933	Increase or Decrease
RAILWAY OPERATING REVENUES	$91,144,973	$87,958,483	+$3,186,489
TOTAL OPERATING EXPENSES	67,855,400	61,939,472	+5,915,928
Operating ratio	74.45	70.42	+4.03
NET REVENUE FROM OPERATIONS	23,289,573	26,019,011	−2,729,438
Taxes	6,309,518	6,465,606	−156,088
Railway operating income	16,920,436	19,509,950	−2,589,513
Hire of equipment —Dr.	3,578,865	2,815,883	+762,982

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Joint facility rents	2,115,240	2,205,292	–90,052
NET INCOME FROM TRANSPORTATION OPERATIONS	13,543,613	16,938,148	–3,394,534
TOTAL INCOME	14,495,352	17,965,691	–3,470,338
Rent for leased roads	942,884	933,456	+9,427
Interest on funded debt	16,056,407	16,315,710	–259,302
NET INCOME	*$2,964,646	$158,901	–$3,123,547

* Deficit.

LEHIGH VALLEY.—*R.F.C. Loan.*—This company has applied to the Reconstruction Finance Corporation for a three-year extension of its loan of $1,500,000, which matures on April 29.

LEHIGH & NEW ENGLAND.—*Bonds.*—The Interstate Commerce Commission has authorized this company to issue $6,500,000 of general mortgage 4 per cent, Series A, bonds, to be sold to Kidder Peabody & Company at 98, making the cost to the railroad approximately 4.117 per cent. The mortgage provides that 10 per cent of the company's net income shall be set aside as a sinking fund to retire the bonds.

MAINE CENTRAL.—*Abandonment Application Denied.*—The Interstate Commerce Commission has denied the application of this company for permission to abandon operation of a line extending from Rumford, Me., to Oquossoc.

NEW YORK, NEW HAVEN & HARTFORD.—*Annual Report.*—The 1934 annual report of this company shows net deficit, after interest and other charges, of $5,532,114, as compared with net deficit of $4,853,832 in 1933. Selected items from the income statement follow:

	1934	Increase or decrease compared 1933
RAILWAY OPERATING REVENUES	$69,283,109	+$2,058,358
Maintenance of way	7,867,557	–15,322
Maintenance of equipment	12,191,272	+886,126
Transportation	26,954,429	+1,870,739
TOTAL OPERATING EXPENSES	52,714,211	+3,487,185
Operating ratio	76.09	+2.86
NET REVENUE FROM OPERATIONS	16,568,897	–1,428,826
Railway tax accruals	4,511,877	+66,872
Railway operating income	12,036,425	–1,469,661
Hire of freight cars—Dr.	2,086,446	+260,543
NET RAILWAY OPERATING INCOME	5,617,020	–2,078,406
Non-operating income	5,086,441	+1,145,891
GROSS INCOME	10,703,461	–932,515
Rent for leased roads	2,789,689	+7,621
Interest on funded debt	11,386,882	–145,747
TOTAL DEDUCTIONS FROM GROSS INCOME	16,235,575	–254,233
NET INCOME (Deficit)	$5,532,114	–$678,282

MINNEAPOLIS & ST. LOUIS.—*Dismemberment.*—A joint resolution was introduced in the Iowa legislature on March 26, protesting any action to divide the road among other western carriers. The resolution, filed in the Senate, was a result of a conference between the governor and legislators, shippers and representatives of the railroad in Iowa. It urges the Interstate Commerce Commission, the Reconstruction Finance Corporation and the Iowa Railroad Commission to prevent any dismembering of the road and to try to reorganize the road under its present management as a permanent, independent railway system. It charged that some of the roads which would benefit by the parceling plan were "not warranted to take over any new burdens of purchase." It was suggested that instead of allowing eight western roads to purchase the Minneapolis & St. Louis for $7,200,000 of loaned R.F.C. money, the railroad in its present form should be given that loan to place it on a firm financial footing.

RUTLAND.—*Annual Report.*—The annual report of this company for 1934 shows net deficit, after interest and other charges, of $375,101, as compared with net deficit of $70,328 in 1933. Selected items from the income statement follow:

	1934	1933	Increase or Decrease
Average Mileage Operated	407.29	413.03	–5.74
RAILWAY OPERATING REVENUES	$3,248,406	$3,386,805	–$138,399
Maintenance of way	550,097	565,563	–15,465
Maintenance of equipment	676,666	668,038	+8,627
Transportation	1,558,256	1,511,682	+46,574
TOTAL OPERATING EXPENSES	3,071,677	3,026,254	+45,423
Operating ratio	94.56	89.35	+5.21
NET REVENUE FROM OPERATIONS	176,728	360,551	–183,822
Railway tax accruals	235,405	237,470	–2,064
Railway operating income	*59,262	122,775	–182,037
Equipment rents—Net Cr.	15,786	35,729	–19,942
Joint facility rents—Net Cr.	29,665	128,245	–98,579
NET RAILWAY OPERATING INCOME	*13,810	286,749	–300,559
Non-operating income	61,357	68,358	–7,001
GROSS INCOME	47,546	355,108	–307,561
Rent for leased roads	15,000	19,000	–4,000
Interest on funded debt	400,990	403,740	–2,750
TOTAL DEDUCTIONS FROM GROSS INCOME	422,649	425,436	–2,787
NET DEFICIT	$375,101	$70,328	–$304,773

* Deficit.

SEABOARD AIR LINE.—*Equipment Trust.*—The Federal court in Orlando, Fla., has authorized the receivers of this company to refund $25,865,000 in outstanding equipment trust obligations for a 10-year period.

Dividends Declared

Lehigh & Hudson River.—$1.00, quarterly, payable March 30 to holders of record March 21.

Reading—50c, quarterly, payable May 9 to holders of record April 11.

Average Prices of Stocks and of Bonds

	April 2	Last week	Last year
Average price of 20 representative railway stocks..	28.79	28.58	46.34
Average price of 20 representative railway bonds..	70.32	71.07	78.33

Railway Officers

EXECUTIVE

W. T. Gill, general manager for the Piedmont & Northern has been elected vice-president and general manager for the Piedmont & Northern and the Durham & Southern, with headquarters at Charlotte, N. C.

Edward Flynn, vice-president in charge of operation of the Chicago, Burlington & Quincy and vice-president of the Colorado & Southern, has been elected to the newly-created position of executive vice-president of these companies, with headquarters as before at Chicago. Mr. Flynn's election to the executive vice-presidency of the Burlington marks the recreation of a position that was discontinued following the retirement of Edward P. Bracken on January 1, 1933. The position of vice-president in charge of operation has been abolished.

Mr. Flynn has been connected with the Burlington continuously for 38 years. He was born on May 19, 1873, at Bement, Ill., and after short periods of service with the Chicago & Eastern Illinois, the Wabash and the Southern Pacific, he went with the

Edward Flynn

Burlington in 1897 as a brakeman. Three years later he was made a conductor and in 1906 he was further advanced to trainmaster at Omaha, Neb., being promoted to assistant superintendent at Lincoln, Neb., in 1908. In the following year Mr. Flynn was advanced to superintendent at Omaha, later being transferred to McCook, Neb., and thence to La Crosse, Wis. In June, 1917, he was transferred to Chicago, and in April, 1918, he was promoted to general superintendent of the Nebraska district, with headquarters at Lincoln. In December, 1922, Mr. Flynn was made general manager of the Lines West of the Missouri River, with headquarters at Omaha, holding this position until September 24, 1931, when he was elected vice-president in charge of operation at Chicago. Later he was elected also vice-president of the Colorado & Southern and of the Ft. Worth & Denver City. His election as executive vice-president of the

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SERVICE RECORDS *count most!*

In the choice of boiler tubes, nothing deserves more consideration than service records. What the tubes have done in the past under the most trying conditions of use, points quite definitely to the right selection. Experienced users of boiler tubes in the Railway, Marine, and Power Plant fields well know the long, satisfactory service given by NATIONAL Seamless Boiler Tubes. In specifying these tubes they know that they can count on the *highest degree of reliability*—they are not taking chances on either materials or methods.

The reasons for such proved performance, when well weighed, are convincing. First, and most important, a NATIONAL Seamless Boiler Tube has no weld—no long line of possible weakness. It is pierced from solid steel! And no other method yet devised, however ingeniously employed, can provide, with invariable certainty, the structural homogeneity of a solid forging. One continuous hollow cylinder, expanded and rolled at proper and definitely controlled temperatures to produce uniform grain refinement and uniform transverse and longitudinal strength —that's NATIONAL Seamless!

There are other reasons. See the list to the right. And NATIONAL Seamless Boiler Tubes comply, of course, with all recognized specifications—water-tube or fire-tube boilers. For strength, safety and economy, standardize on NATIONAL—

America's Preferred Boiler Tubes

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Pacific Coast Distributors—COLUMBIA STEEL CO., San Francisco, Calif.
Export Distributors—UNITED STATES STEEL PRODUCTS CO., New York, N. Y.

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CHECK THESE REASONS WHY NATIONAL TUBES LAST LONGER

- √ Seamless—no uncertainty about full wall strength in every tube.
- √ Higher creep strength—only "killed" open hearth steel used.
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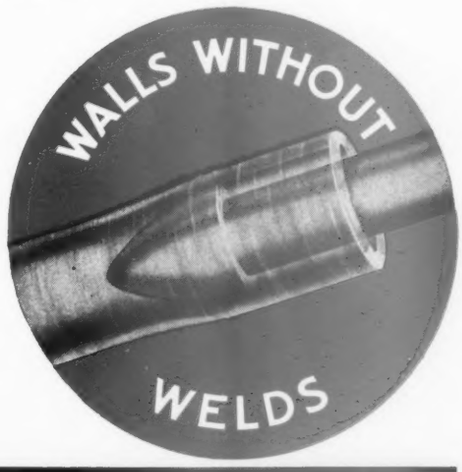
- √ Exceptional ductility—readily manipulated—lowest installation costs.
- √ Dependable uniformity insured by careful metallurgical supervision.
- √ Thirty-five years' proved performance under exacting service.
- √ Comply with all recognized specifications—water-tube or fire-tube boilers.
- √ Product of America's largest manufacturer of seamless pipe and tubes.



NATIONAL SEAMLESS

BOILER TUBES—SAFE ENDS—SUPERHEATER TUBES—CONDENSER TUBING—ARCH TUBES—SUPERHEATER PIPES—STAY-BOLT MATERIAL

Burlington and of the C. & S. became effective on April 1.

Colonel W. S. Battle, Jr., vice-president in charge of real estate, taxation and public relations for the Norfolk & Western, retired on April 1 after nearly 45 years of service with that road. He has

Col. W. S. Battle, Jr.

been succeeded by **Sydney F. Small,** who was assistant to the president, the position to which **J. H. Gearhart,** chief clerk to the president, has now been promoted.

Colonel Battle worked his way up through N. & W. ranks from the clerkship on which he entered its service in 1890 to the vice-presidency which he has held since 1926. Though his long experience covered many departments of the railway he was best known in recent years for his work in the field of public relations, being among the first to recognize and call attention to the necessity for public relations work by the individual railroads. His skill in this latter connection has been credited in large measure for the success of N. & W. public relations policies. Colonel Battle was born at Rocky Mount, N. C., on February 24, 1870, and was educated at Horner's School, Oxford, N. C., and the University of North Caro-

S. F. Small

lina. As stated above, he entered the N. & W. service in December, 1890, as a clerk in the trainmaster's office at Radford, Va., although he had for the two previous years been in railway service as a clerk in the auditor's office of the Atlantic Coast Line at Wilmington, N. C. After three years with the N. & W. Colonel Battle was, in 1893, promoted to chief clerk to the superintendent of the Pocahontas division; and in 1897 he became agent at Pulaski, Va. In 1899 he was promoted to yardmaster at Roanoke, Va., and, in 1900, to assistant trainmaster of the Pocahontas and Radford divisions. During the next two years he was successively trainmaster and agent at Norfolk, Va., and in 1903 he became claim agent at Roanoke, being promoted in another year to general claim agent. During 1912-1913 Colonel Battle was a member of the Valuation Committee, after which service he resumed his position as N. & W. general claim agent, and continued in that capacity until his election to the vice-presidency in 1926.

Mr. Small, who succeeds Colonel Battle, is also the mayor of Roanoke. He has been in N. & W. service since 1911 and has been closely associated with President A. C. Needles for more than two decades. A native of Norfolk, Mr. Small entered the N. & W. service in July, 1911, as a clerk in the transportation department at Roanoke. The following year he was promoted to secretary to the general manager,

J. H. Gearhart

then Mr. Needles. In 1916, when Mr. Needles became vice-president in charge of operation, Mr. Small continued as his secretary and on May 1, 1924, became secretary to the president when Mr. Needles succeeded President N. D. Maher. He was promoted to assistant to the president on July 1, 1929.

Mr. Gearhart entered Norfolk & Western service on December 4, 1908, as stenographer-clerk in the office of the road foreman of engines and car foreman at Crewe, Va. In August of the following year, he came to Roanoke as stenographer to the assistant superintendent of motive power, later serving successively as secretary to the second vice-president and general manager, to the vice-president in charge of operation, to the first vice-president and to the president. He was promoted to chief clerk to the president on July 21, 1922, the position he held until his recent appointment.

R. C. Morse, whose appointment as acting vice-president of the Eastern region of the Pennsylvania, with headquarters at Philadelphia, Pa., was noted in the *Railway Age* of March 30, was born at Cleveland, Ohio, on March 18, 1882. He was graduated from the Sheffield Scientific School of Yale University with a Ph.B. degree and entered railway service in 1907 as yard clerk on the Pennsylvania. After having been promoted to yardmaster and then to trainmaster, Mr. Morse left the

R. C. Morse

P. R. R. to serve in the World War during 1917 and 1918. He returned to the railroad as superintendent of the Philadelphia Terminal division and later served as general superintendent of transportation, first at Chicago and then at Buffalo, N. Y. Mr. Morse was appointed general superintendent at New York in June, 1927, and in January, 1930, he became assistant general manager of the New York Zone. This latter position was abolished in May, 1932, and Mr. Morse was appointed general superintendent of the New Jersey division, with headquarters at New York. In June, 1934, he was appointed general manager of the New York Zone and the Long Island, with headquarters at New York.

Daniel Miller Sheaffer, whose appointment as assistant to vice-president-operation for the Pennsylvania was noted

D. M. Sheaffer

in the *Railway Age* of March 30, was born on September 20, 1885, at Pittsburgh, Pa., and attended the public schools of that city, the Bordentown, N. J., Military Institute and the University of Pennsylvania (1909). Mr. Sheaffer got his first railroad experience during summer vacations

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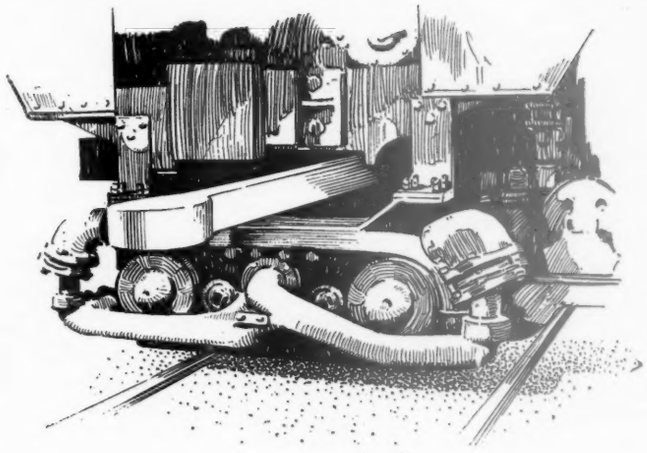

4,320 lb. COAL AN HOUR or
5,000 lb. COAL AN HOUR—

THE smaller fuel consumption represents the performance of a locomotive equipped with an Elesco feed water heater.

This is an example of what reclaiming waste heat from exhaust steam through a feed water heater amounts to in fuel for the same work at the drawbar. In this case, the Elesco feed water heater reclaims 5,600,000 B.t.u. from the exhaust steam, replacing that amount of heat formerly generated with fuel in the firebox.

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as an axeman and chainman in the maintenance of way and engineer departments of the Pennsylvania. In June, 1908, he entered P. R. R. service as a clerk in the passenger traffic department and in May, 1911, he was appointed tariff inspector of the passenger department, becoming tourist agent the following year. He was appointed district passenger solicitor at Philadelphia in March, 1913, and in 1915 he was transferred in the same capacity to New York. In January, 1917, Mr. Sheaffer was appointed express agent for the Lines East of Pittsburgh, Buffalo and Erie, with headquarters at Philadelphia. He retained that office under the United States Railroad Administration and in 1920 became express traffic agent; his jurisdiction was extended to cover mail traffic in 1923. Mr. Sheaffer was appointed chief of passenger transportation at Philadelphia in 1927, the position he held until his recent appointment.

OPERATING

J. W. Devins, acting general manager of the Minneapolis & St. Louis, with headquarters at Minneapolis, Minn., has been appointed general manager.

O. A. Beerman, trainmaster of the Iowa & Dakota division of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Mason City, Iowa, has been transferred to the Hastings & Dakota division, at Aberdeen, S. D., succeeding **R. E. Sizer,** who in turn has been transferred to Mason City, to succeed Mr. Beerman.

Charles P. Cahill, acting superintendent of the Colorado division of the Union Pacific, who has been promoted to superintendent of the same division, with headquarters at Denver, Colo., as noted in the *Railway Age* of March 23, was born on April 23, 1886, at Lyndonville, Vt. Mr. Cahill first entered railway service on September 1, 1899, as a call boy on the St. Joseph & Grand Island (a part of the

Charles P. Cahill

Union Pacific System), holding this position until 1904, when he was appointed a telegraph operator. Six years later he was further advanced to train dispatcher and in 1916, he was promoted to chief dispatcher. In the following year Mr. Cahill was appointed rules examiner and later in the same year he was appointed trainmaster. On August 30, 1930, he was promoted to assistant superintendent at Denver, and on December 20, 1934, he was appointed acting superintendent, with the same headquarters, holding this position until his recent appointment.

John A. Appleton, whose appointment as general manager of the New York Zone of the Pennsylvania and the Long Island was noted in the *Railway Age* of March 30, was born at New York on December 24, 1891, and was graduated from Yale University in 1914. In September, 1915, he entered railway service as a yard clerk on the Pennsylvania, where he remained until October, 1917, when he enlisted in the engineer corps of the United States Army. Mr. Appleton served in France, where he attained the rank of captain in the transportation corps. In August, 1919, he returned to the Pennsylvania as terminal supervisor of the Greenville yards at Jersey City, N. J., being advanced to assistant trainmaster of the New York division a year later. In July, 1921, he became

J. A. Appleton

assistant freight trainmaster at Greenville, N. J. From 1922 to 1924 he occupied successively the positions of trainmaster of the Cumberland Valley division at Chambersburg, Pa., and freight trainmaster of the Philadelphia Terminal division at Philadelphia, Pa. In June, 1924, he was promoted to superintendent of the Monongahela division, with headquarters at Uniontown, Pa., later being transferred to the Erie and Ashtabula division at Erie, Pa., to the Columbus division at Columbus, Ohio, and to the Pittsburgh division at Pittsburgh, Pa. In June, 1929, he was appointed acting general superintendent of the Lake division, with headquarters at Cleveland, Ohio, becoming in October, 1929, general superintendent of the Northwestern division, with headquarters at Chicago. In 1931 Mr. Appleton was appointed general superintendent at Cleveland and in July, 1933, he became general superintendent of the Eastern Pennsylvania division at Harrisburg, Pa., the position he held until his recent promotion.

Edgar E. Ernest, whose appointment as chief of passenger transportation for the Pennsylvania at Philadelphia was noted in the *Railway Age* of March 30, was born on January 18, 1891, at Altoona, Pa. He was educated in the public schools and at Altoona Business College, entering the service of the Pennsylvania in July, 1907, as yard messenger. He later became yard clerk and served in various offices at the Altoona yard until 1912, when he was transferred to the chief train dispatcher's office. He was appointed assistant yard-

Edgar E. Ernest

master in 1916, and served in that capacity both at Altoona and Hollidaysburg, Pa. Two years later he was promoted to yardmaster, which position he held until May, 1920, when he was appointed assistant freight trainmaster at Mifflin, Pa. Mr. Ernest later served in the same capacity at Harrisburg and Hollidaysburg and in June, 1924, he was promoted to trainmaster of the Cumberland Valley division. Two years later he was transferred to the Maryland division as freight trainmaster, and in July, 1928, he was appointed superintendent of the Buffalo division. In February, 1932, Mr. Ernest was appointed superintendent of passenger transportation at Pittsburgh, Pa., later becoming superintendent of freight transportation. In June, 1934, Mr. Ernest was appointed superintendent of the Long Island, with headquarters at New York, the position he held at the time of his recent appointment.

Fulton Lyon Dobson, whose appointment as general fuel manager for the Pennsylvania at Philadelphia, Pa., was noted in the *Railway Age* of March 30, was born at Greensburg, Pa., on October 19, 1887. He attended public schools in Greensburg and Wilkinsburg, Pa., and was graduated from Purdue University with the degree of B.S. in M.E. in 1908. Mr. Dobson entered railway service with the Pennsylvania as laborer, serving in this capacity during the summers of 1901 and 1902. From 1903 to 1908 he served in various capacities, being furloughed during school terms. From 1908 to 1910 Mr. Dobson served as special apprentice at the Altoona, Pa., shops and from 1910 to 1913 as inspector of the Philadelphia Terminal and Buffalo divisions. In November, 1913, he was appointed assistant master mechanic at Jersey City and in 1915 he became general foreman at Buffalo, N. Y. He was appointed assistant engineer, motive power, at Williamsport, Pa., in 1916, and at Altoona in 1917. From 1918 to 1927, Mr. Dobson served successively as master mechanic of the Williamsport division and of the New York division. In January, 1927, he was appointed assistant superintendent of the New York division

Continued on next left-hand page

at Jersey City, N. J., and in March, 1927, he became superintendent of the Schuylkill division at Reading, Pa. In June, 1929, he

F. L. Dobson

became acting division superintendent at Pittsburgh, Pa., and in November of the same year he was appointed division superintendent there. In July, 1933, he was appointed general superintendent of the Lake division at Cleveland, Ohio, the position he held until his recent appointment.

T. C. Herbert, whose appointment as general superintendent of the Lake division of the Pennsylvania was noted in the *Railway Age* of March 30, was born at Richmond, Maine, on April 30, 1883. Mr. Herbert was educated in the public schools of Richmond and was graduated from the University of Maine with the degree of Bachelor of Science in Civil Engineering. He entered the service of the Pennsylvania in December, 1905, as an assistant on an engineering corps, serving in that capacity on several divisions until December, 1915, when he was appointed pilot engineer in the valuation engineer's office. Mr.

T. C. Herbert

Herbert was promoted to supervising pilot engineer in June of the following year. In September, 1916, he became assistant division engineer of the Louisville division, later holding similar positions on the St. Louis and Pittsburgh divisions. In March, 1920, he was appointed division engineer of the St. Louis division and in February, 1922, he was transferred to the Peoria division as superintendent. Mr. Herbert was transferred to the Schuylkill division in the same capacity in March, 1923, and in October of the same year was transferred to Camden as superintendent of the Atlantic and Camden terminal divisions. In June, 1926, he was appointed superintendent of the Monongahela division and in July, 1928, he was appointed superintendent of the Panhandle division, with headquarters at Pittsburgh, Pa., being transferred in the same capacity to the Pittsburgh division in July, 1933.

J. C. White, whose appointment as superintendent of the Long Island was noted in the *Railway Age* of March 30, entered railway service with the Pennsylvania as a chainman in the division engineer's office at Tyrone, Pa., in June, 1912. He later served as division engineer of the New York division and in January, 1931, he was appointed superintendent of the Monongahela division at Uniontown, Pa., being transferred in the same year to the St. Louis division in the same capacity. Mr. White became superintendent of the

J. C. White

Eastern Ohio division at Pittsburgh in September, 1932, and a year later was appointed superintendent of the Philadelphia Terminal division. In November, 1934, he was appointed superintendent of freight transportation of the Pennsylvania's Eastern region at Philadelphia, the position he held until his recent appointment.

Andrew F. McIntyre, whose appointment as superintendent of freight transportation of the Eastern region of the Pennsylvania was noted in the *Railway Age* of March 30, was born in Canandaigua, N. Y., on April 4, 1891. After completing a high school education, he studied telegraphy and in May, 1909, he entered the service of the Pennsylvania as an operator on the Elmira division, having had previous railway experience in the fall of 1905 and 1906. In March, 1913, he was promoted to clerk and operator and in April, 1918, he was appointed extra train dispatcher, becoming one of the regular train dispatchers on the division in June. 1918. Mr. McIntyre was appointed yardmaster on the Elmira division in August, 1927, and two months later he was transferred in the same capacity to the Williamsport division. Here he was advanced to assistant trainmaster in April, 1928, and then to supervisor of train service of the Central Pennsylvania general division in February, 1929. He was promoted to trainmaster in December, 1929, and assigned, first to the Norfolk division at Cape Charles, Va., and then in November, 1934, to the St. Louis divi-

A. F. McIntyre

sion at St. Louis, Mo., the position he held at the time of his recent appointment.

Paul E. Feucht, whose appointment as superintendent of the Wilkes-Barre division of the Pennsylvania was noted in the *Railway Age* of March 30, was born at Indianapolis, Ind., on January 4, 1900. He received his early education in that city and completed his college education at Purdue University. Mr. Feucht entered the service of the Pennsylvania as an assistant on the Engineering Corps of the Louisville division. In May, 1925, he was transferred to the corps of the Indianapolis division where he remained until January, 1927, when he was promoted to assistant track supervisor and assigned to the Philadelphia Terminal division. He was transferred in the same capacity to Tyrone, Pa., in September, 1928, from which position he was promoted to supervisor at

P. E. Feucht

Norristown, Pa., in January, 1929. A year later he returned to Tyrone as a main line supervisor. For a few months in the Spring of 1933 he was relieved of his track work and assigned to special duty in the motor service. Upon the completion of this task, he returned to Tyrone in July, 1933, and was promoted to the position of division engineer in charge of all maintenance of way and track work on the Renovo division. In October, 1934, he was

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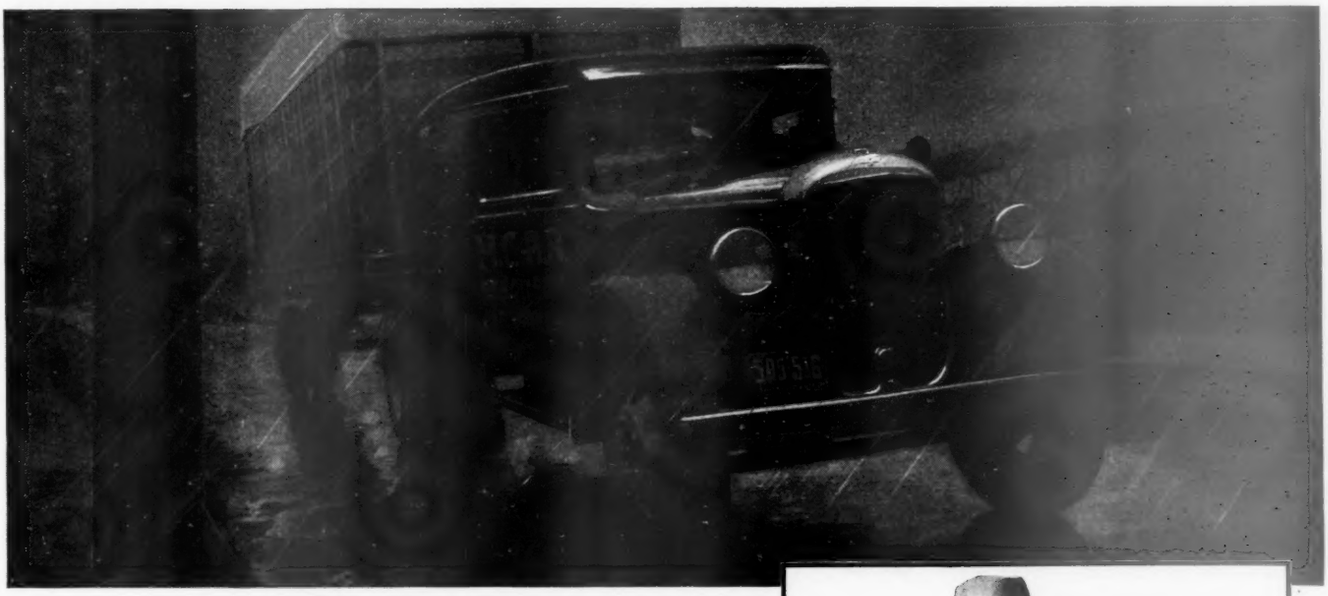

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transferred back to Indiana as division engineer of the Fort Wayne division, with headquarters at Fort Wayne, the position he held at the time of his recent appointment.

TRAFFIC

M. O. Dafoe, general agent in the passenger department of the Canadian National, has retired. **O. A. Trudeau,** special representative of the passenger department in Montreal, has been appointed district passenger agent with jurisdiction over the Montreal district. **E. C. Kennedy,** city passenger agent at Montreal, has been appointed general agent.

MECHANICAL

F. J. Jumper, inspection engineer on the Union Pacific, has been appointed to the newly-created position of assistant general mechanical engineer with headquarters at Omaha, Neb. **A. L. Looney,** formerly general car inspector at Omaha, has been appointed superintendent of the car department with the same headquarters. **D. M. Raymond,** general foreman in the car department, with headquarters at Council Bluffs, Iowa, has been appointed general car inspector at Omaha.

Harry B. Feather, general roundhouse foreman for the Louisville & Nashville, has been appointed master mechanic, with headquarters at Corbin, Ky., succeeding the late **Fred W. Oakley.** The appointment became effective February 1.

PURCHASES AND STORES

F. J. McGuinness, whose appointment as superintendent of stores for the Delaware & Hudson, with headquarters at Colonie, N. Y., was noted in the *Railway Age* of March 30, was born in Boonesville, N. Y., on July 6, 1889, and attended grammar school and high school in Oneonta, N. Y. Mr. McGuinness entered the service of the Delaware & Hudson as messenger in the office of the master mechanic at Oneonta, N. Y., in October, 1907. The following year he was transferred to the office of the superintendent of stores as clerk. He was promoted to acting division storekeeper in 1912 and in the same year he became division storekeeper, the position he held until his recent appointment.

ENGINEERING AND SIGNALING

C. E. O'Brien, assistant supervisor of telegraph and signals in the office of the superintendent of telegraph and signals for the Pennsylvania, has been appointed supervisor of telegraph and signals of the Atlantic division of the Pennsylvania-Reading Seashore Lines, succeeding **W. A. Swonger** who has been appointed supervisor of telegraph and signals on the P. R. R. Delmarva division, at Harrington, Del. **C. W. Henricks,** acting supervisor of telegraph an signals of the Delmarva division, has been transferred to the New York zone.

OBITUARY

Fred W. Oakley, master mechanic for the Louisville & Nashville, with headquarters at Corbin, Ky., died on January 25 at the age of 57.

Norfolk and Western Railway Company

Thirty-Ninth Annual Report

Roanoke, Va., April 1st, 1935.

The Annual Report for the year ended December 31st, 1934, has been approved by the Board of Directors for submission to the stockholders. A synopsis follows:

Following is a comparison of 1934 figures with those for 1933:

	1934	1933		Increase or Decrease
Revenue from Freight	$68,617,069.80	$65,628,307.81	I.	$2,988,761.99
Revenue from Passengers	1,780,032.08	1,475,235.66	I.	304,796.42
Revenue from Mail, Express and Miscellaneous	2,310,765.17	2,159,347.38	I.	151,417.79
Total Revenue from Operations	$72,707,867.05	$69,262,890.85	I.	$3,444,976.20
Maintenance of Roadway and Structures	$7,633,685.08	$6,243,603.18	I.	$1,390,081.90
Maintenance of Equipment	16,043,044.77	13,483,654.03	I.	2,559,390.74
Transportation — Expense of Operation	16,551,259.15	15,335,719.14	I.	1,215,540.01
Other Expenses	4,303,268.03	3,954,330.99	I.	348,937.04
Total Operating Expenses	$44,531,257.03	$39,017,307.34	I.	$5,513,949.69
Net Revenue from Operations	$28,176,610.02	$30,245,583.51	D.	$2,068,973.49
Ratio of Operating Expenses to Total Operating Revenue	61.25%	56.33%	I.	4.92%
Federal, State and Local Taxes	$7,768,000.00	$7,340,000.00	I.	$428,000.00
Uncollectible Revenue Charges	10,663.90	5,328.37	I.	5,335.53
Net Rental of Equipment and Joint Facilities—Credit	2,120,340.24	1,756,098.98	I.	364,241.26
Net Railway Operating Income	$22,518,286.36	$24,656,354.12	D.	$2,138,067.76
Other Income — (Mainly Interest on Investments)	1,738,779.50	1,963,993.23	D.	225,213.73
Gross Income from all sources	$24,257,065.86	$26,620,347.35	D.	$2,363,281.49
Interest Paid on Bonds and Equipment Obligations	$3,537,910.83	$3,892,784.52	D.	$354,873.69
Miscellaneous Deductions	438,973.61	426,422.46	I.	12,551,15

	1934	1933		Increase or Decrease
Net Income	$20,280,181.42	$22,301,140.37	D.	$2,020,958.95
Dividends on Adjustment Preferred Stock — $4.00 per share	$919,692.00	$919,692.00		.....
Extra Dividend on Common Stock—$2.00 per share	2,812,966.00	.....	I.	$2,812,966.00
Income Balance	$16,547,523.42	$21,381,448.37	D.	$4,833,924.95
Earned per share on Common Stock outstanding	$13.77	$15.20	D.	$1.43
Dividends on Common Stock—$10.00 per share	$14,064,830.00	$14,064,830.00		.....
Funded Debt outstanding at end of year	86,909,531.92	91,253,531.92	D.	$4,344,000.00
Capital Stock outstanding at end of year	163,640,600.00	163,640,600.00		.....
Investment in Road and Equipment at end of year	454,318,927.66	460,893,605.89	D.	6,574,678.23

The investment in property used in transportation service was $326,296,543.01, an increase of $1,032,822.98.

The investment in equipment owned was $128,022,384.65, a decrease of $7,607,501.21, largely due to retirement of 117 steam locomotives, 98 passenger train cars, 3,245 freight train cars, 117 work equipment cars and 7 units of miscellaneous equipment, chiefly because of obsolescence. During 1934 the Company received 33 used all-steel passenger train cars, 750 rebuilt all-steel hopper coal cars and 18 units of miscellaneous equipment. The Company's equipment at end of year consisted of 611 steam locomotives, 16 electric locomotives, 295 passenger train cars, 46,184 freight train cars and 1,882 work and miscellaneous units.

Comparison of traffic and operating revenue figures with those for 1933 shows the following changes:

Number of passengers	1,345,379	Inc.	494,602	58.14 per cent
Average haul of passengers	63.85 miles	Dec.	12.89 miles	16.80 per cent
Revenue from passenger fares	$1,780,032.08	Inc.	$304,796.42	20.66 per cent
Average rate per passenger per mile	2.072 cents	Dec.	.187 cents	8.28 per cent
Revenue freight carried	37,660,111 tons	Inc.	2,232,030 tons	6.30 per cent
Average haul of freight	277.71 miles	Inc.	.97 miles	.35 per cent

Revenue from freight transportation	$68,617,069.8	Inc.	$2,988,761.99	4.55 per cent
Average rate per ton per mile	.656 cents	Dec.	.013 cents	1.94 per cent
Average tons of revenue freight per train mile	1,506.27	Inc.	33.66 tons	2.29 per cent
Shipments of coal	30,422,576 tons	Inc.	1,512,760 tons	5.23 per cent
Shipments of coke	430,241 tons	Inc.	148,072 tons	52.48 per cent
Shipments of ore	380,155 tons	Inc.	36,547 tons	10.64 per cent
Shipments of pig and bloom iron	21,019 tons	Inc.	9,327 tons	79.77 per cent
Shipments of lumber	411,059 tons	Dec.	62,169 tons	13.14 per cent

The Company received from emergency freight rates, effective January 4th, 1932, to September 30th, 1933, approximately $2,758,269.93, of which amount $1,859,380.73, received to March 31st, 1933, was paid over currently to The Railroad Credit Corporation, and the balance, $898,889.20, was retained by the Company. To December 31st, 1934, The Railroad Credit Corporation has repaid $718,503.60, leaving a balance due of $1,140,877.13.

Reduction in basic passenger rates, partially effective December 1st, 1933, was extended February 1st, 1934, to include the Company's entire system. The new rates are two cents a mile in coaches and three cents in Pullman cars, the Pullman surcharge having been eliminated.

Gross Operating Revenues for 1934 were $72,707,867.05, an increase of $3,444,976.20, or 4.97 per cent. Operating Expenses were $44,531,257.03, an increase of $5,513,949.69, or 14.13 per cent. The property has been maintained to the Company's usual standards, the increase in Operating Expenses being due, in part, to additional maintenance of way and structures and of equipment, and also to increased Transportation Expenses, in large part due to higher fuel costs and increased traffic. Increases in Operating Expenses were attributable also, in part, to greater cost of material and supplies, partial restoration of wage and salary deductions, and accrual of Company's proportion of contribution required by Railroad Retirement Act.

Net Revenues from Operations were $28,176,610.02, a decrease of $2,068,973.49, or 6.84 per cent. Income Balance, after paying the regular 4 per cent. dividend of $919,692.00 upon the Adjustment Preferred Stock and an extra dividend of $2.00 per share upon the Common Stock, $2,812,966.00, was $16,547,523.42, a decrease of $4,833,924.95, or 22.61 per cent. Quarterly dividends of $2.00 per share, a total of $8.00 per share, were paid on the Common Stock, and an extra dividend of $2.00 per share on the Common Stock was charged against earnings for 1934 and paid March 19th, 1935.

There was no change in the outstanding Capital Stock, which represented 65.31 per cent. of total outstanding capitalization.

Funded Debt was reduced $4,344,000, principally through discharge at maturity, of all the Company's remaining Equipment Trust Obligations, viz. $1,200,000. Equipment Trust 4½ per cent. certificates, Series 1924 and 1925, and retirement at maturity of $3,143,000 Norfolk and Western Railroad Company Improvement and Extension Mortgage 6 per cent. bonds. Funded Debt represented 34.69 per cent. of total outstanding capitalization.

The Company has called $102,000 Convertible 10-25 Year 4½ per cent. bonds, due September 1st, 1938, for redemption at 105 and accrued interest on March 1st, 1935.

The operated mileage of the Company was 2,131.76 miles. Including 27.21 miles leased from subsidiary companies and 26.99 miles operated under trackage rights, the first main track mileage was 2,185.96 miles and the total mileage of all tracks was 4,650.72 miles.

The more important additions and betterments were the laying of 118.51 miles of track with 131-lb. rail, the new standard weight, and the addition of 230,674 cubic yards of standard ballasting in main line tracks. At Lambert Point, Va., a new low level coal pier, equipped with elevating car dumper for transferring coal direct from road cars to vessels is under construction and will be completed about January 1st, 1936. At Norfolk, Va., a fire-proof platform for handling fruit and produce shipments, an unloading platform and ramp were erected, and a public unloading track was constructed. At Roanoke, Va., telephone and telegraph equipment was installed for use in operation of Shenandoah and Radford Divisions, replacing equipment destroyed by fire. Electric power outlet receptacles were installed at several important passenger stations, for testing and maintaining air-conditioning apparatus on passenger equipment. Signal pole lines were reconstructed between Norfolk and Evergreen, Va., and between Villamont and Roanoke, Va. Concrete overhead highway bridges were constructed at Petersburg, Ripplemead, Wytheville, Martinsville and east of Dublin, Va. Undergrade crossing was constructed at Ada, W. Va., to provide for State and Federal highways. Two grade crossings were eliminated, one by widening bridge and one by abandonment.

A spur track, 0.74 of a mile in length, from junction of Buchanan Branch with Lester Fork of Knox Creek, in Buchanan County, Va., to reach a coal operation of the Panther Coal Company, was completed and placed in operation. Bull Creek Spur Track of Buchanan Branch, 2.86 miles in length, from Junction of Bull Creek with Buchanan Branch, in Buchanan County, Va., to serve a coal operation of the Bull Creek Coal Company will be completed early in 1935.

During 1934 the Company improved greatly its freight and passenger equipment and services. In freight service, further betterments and improvements were made in locomotives and freight cars. Manifest trains maintained a high percentage of on-time arrival at termini. The general excellence of these improved freight services created a large measure of satisfaction to the shipping public. Passenger equipment is being modernized as rapidly as possible. Wooden coaches have been replaced entirely by all-steel cars. The two principal through main line trains—The Pocahontas and The Cavalier—have been air-conditioned throughout and equipped with new coaches of de luxe type, refinished dining and lounge-dining cars and most modern standard Pullman equipment. These improvements, together with a reduction in the basic passenger fare, have produced the first increase in passenger revenue in more than a decade. Use of heavy rail and stone ballast in tracks subject to heavy traffic has proved very economical. About 68 per cent. of the first track and practically all of the second and third tracks of main lines have been laid with 130 and 131 pound rail. This progressive program has resulted in an appreciable reduction in maintenance expenditures.

One hundred twelve new industries located on the Company's line, producing foods, textiles, lumber, chemicals, petroleum, coal, machinery and miscellaneous products, with a total capitalization of $9,838,200 and employing 9,593 persons. Thirty additions to established plants were completed, costing $5,017,500 and employing 2,879 persons. One new coal mine was placed in operation and one abandoned. At the close of the year there were 130 companies organized for producing coal and coke on the Company's lines, with a total of 191 mines, of which 151 mines were in actual operation.

Condensed General Balance Sheet—December 31, 1934

ASSETS:		
Investments		$514,683,486.09
Investment in Road	$326,296,543.01	
Investment in Equipment Owned	128,022,384.65	
Sinking Funds and Deposits account property sold	1,488,053.83	
Miscellaneous Physical Property	5,248,307.40	
Investment in Affiliated Companies	8,972,671.38	
Other Investments	44,655,525.82	
Current Assets		20,066,745.20
Cash	$9,596,804.21	
Materials and Supplies	5,171,285.05	
Other Current Assets	5,298,655.94	
Deferred Assets		13,528,344.87
Norfolk and Western Railway Company-Pocahontas Coal and Coke Company Joint Purchase Money Mortgage Bonds, Securities held for Relief Fund etc.		
Unadjusted Debits		3,698,106.93
Total		$551,976,683.09
LIABILITIES:		
Capital Stock		$163,640,600.00
Adjustment Preferred	$22,992,300.00	
Common	140,648,300.00	
Long Term Debt		86,909,531.92
Mortgage Bonds	$80,721,500.00	
Convertible Bonds	102,000.00	
Miscellaneous	6,086,031.92	
Current Liabilities		7,255,995.11
Traffic and Car Service Balances, Accounts and Wages Payable, Interest and Dividends Matured and Unpaid, Unmatured Dividends Declared, Unmatured Interest Accrued and Other Current Liabilities.		
Deferred and Joint Liabilities		13,378,399.36
Norfolk and Western Railway Company-Pocahontas Coal and Coke Company Joint Purchase Money Mortgage Bonds, Securities held for Relief Fund, etc.		
Unadjusted Credits		67,060,908.94
Accrued Depreciation—Road, Equipment and Miscellaneous Physical Property	$58,755,529.54	
Tax Liability, Insurance Reserves and Other Unadjusted Credits	8,305,379.40	
Sinking Fund Reserves		1,002,641.68
Corporate Surplus		212,728,606.08
Additions to Property through Income and Surplus—Road	$21,428,957.43	
Equipment	23,305,326.27	
Funded Debt Retired through Income and Surplus	14,235,000.00	
Profit and Loss Balance	153,759,322.38	
Total		$551,976,683.09

By order of the Board of Directors.

A. C. NEEDLES,
President.

Table of Operating Statistics of Railways begins on next left-hand page

Freight Operating Statistics of Large Steam Railways—Selected Items for the Month of January,

Region, road, and year	Average miles of road operated	Locomotive-miles: Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (thousands)	Car-miles: Per cent loaded	Ton-miles (thousands): Gross Excluding locomotives and tenders	Ton-miles (thousands): Net Revenue and non-revenue	Average number of locomotives on line: Serviceable	Unserviceable	Per cent unserviceable	Stored
New England Region:												
Boston & Albany 1935	402	136,414	141,741	10,135	2,934	70.0	154,078	55,578	56	39	41.0	6
1934	402	140,902	145,861	9,247	3,221	65.9	170,970	58,214	65	37	36.3	14
Boston & Maine 1935	2,016	277,839	311,674	32,877	8,509	68.8	472,677	180,669	95	181	65.5	1
1934	2,059	286,798	324,884	30,837	8,947	64.2	519,459	193,237	141	145	50.7	13
N. Y., New Hav. & Hartf. 1935	2,045	347,481	419,929	24,496	10,213	66.9	563,014	217,747	207	146	41.3	31
1934	2,044	362,069	441,690	24,377	10,889	62.1	631,366	238,213	204	156	43.4	11
Great Lakes Region:												
Delaware & Hudson 1935	835	217,813	293,807	32,200	6,849	61.5	446,453	210,677	245	30	10.8	147
1934	848	228,796	307,455	35,137	6,971	59.0	468,589	219,077	247	32	11.6	133
Del., Lack. & Western 1935	992	357,931	401,797	54,489	10,860	65.3	651,446	264,097	187	88	31.9	34
1934	998	360,944	398,586	51,159	10,419	62.5	634,551	249,083	194	63	24.6	40
Erie (incl. Chi. & Erie) 1935	2,305	649,573	687,331	41,759	25,790	64.4	1,586,203	627,919	318	164	34.0	94
1934	2,315	625,193	656,789	50,489	24,766	62.2	1,539,009	593,460	321	172	34.8	98
Grand Trunk Western 1935	1,007	214,898	217,888	2,533	5,654	61.6	342,449	119,908	65	78	54.8	..
1934	1,008	203,679	206,401	3,560	4,965	60.6	302,194	104,717	68	84	55.4	2
Lehigh Valley 1935	1,335	384,470	410,000	38,609	11,424	65.8	714,418	303,654	192	121	38.7	24
1934	1,335	398,923	419,168	41,419	11,246	61.4	721,593	297,922	178	138	43.7	14
Michigan Central 1935	1,961	435,745	437,484	17,804	13,646	59.0	829,681	264,648	129	50	27.8	12
1934	1,967	376,436	377,938	15,441	11,617	59.7	696,652	231,885	137	51	27.0	35
New York Central 1935	6,385	1,479,725	1,577,723	111,398	49,075	60.5	3,211,450	1,370,503	539	448	45.4	20
1934	6,418	1,454,558	1,554,261	114,487	50,628	58.0	3,313,429	1,364,532	582	568	49.4	32
New York, Chi. & St. L. 1935	1,661	451,847	453,466	4,675	14,287	63.4	861,664	327,484	144	34	19.1	41
1934	1,660	481,825	487,371	5,308	13,922	59.5	856,884	307,810	130	56	30.0	23
Pere Marquette 1935	2,096	340,266	360,227	3,611	8,317	59.5	539,676	205,345	115	39	25.5	8
1934	2,130	349,509	363,297	3,393	8,333	58.5	536,633	203,236	116	47	28.9	17
Pittsburgh & Lake Erie 1935	234	64,230	66,748	68	2,491	57.3	209,064	112,411	36	35	49.8	14
1934	234	58,455	60,619	1,098	2,190	53.7	192,004	102,149	31	39	56.3	4
Wabash 1935	2,435	559,204	570,478	12,156	15,864	60.9	956,496	319,902	161	168	51.1	27
1934	2,445	516,715	523,020	9,638	14,991	61.4	884,652	289,712	166	172	50.8	64
Central Eastern Region:												
Baltimore & Ohio 1935	6,321	1,309,510	1,588,726	173,712	36,518	61.1	2,518,221	1,139,147	752	553	42.4	169
1934	6,263	1,267,226	1,557,950	173,200	35,188	58.2	2,460,302	1,082,485	675	659	49.4	80
Big Four Lines 1935	2,653	604,128	621,584	24,769	16,980	61.0	1,129,513	516,560	188	158	45.6	8
1934	2,655	567,572	589,694	23,908	15,974	59.9	1,042,199	457,149	197	155	44.0	23
Central of New Jersey 1935	688	142,902	161,935	33,532	4,679	59.2	336,480	166,041	67	98	59.2	9
1934	690	146,655	163,611	28,474	4,638	55.7	341,538	164,451	95	77	44.8	31
Chicago & Eastern Illinois 1935	939	180,069	180,632	2,940	3,897	61.1	271,386	121,276	48	58	54.9	6
1934	939	173,572	174,092	2,697	3,547	57.2	249,459	104,591	63	109	63.2	16
Elgin, Joliet & Eastern 1935	446	89,772	91,986	1,507	1,994	57.7	161,240	79,817	60	28	32.3	9
1934	446	76,415	77,811	1,477	1,588	56.9	126,999	61,171	65	24	26.5	14
Long Island 1935	393	31,903	32,932	14,872	281	54.0	22,129	9,210	38	24	38.2	..
1934	396	31,007	31,876	14,938	304	53.2	23,307	9,578	33	24	42.5	..
Pennsylvania System 1935	10,009	2,587,626	2,908,238	320,811	86,111	61.5	5,855,068	2,627,319	1,388	1,047	43.0	268
1934	10,088	2,601,440	2,908,513	308,944	83,858	59.7	5,716,513	2,501,998	1,526	907	37.3	412
Reading 1935	1,453	414,929	453,332	49,919	11,083	59.8	815,112	400,718	265	98	27.0	70
1934	1,454	444,771	484,686	50,522	11,682	56.5	902,685	438,012	264	119	31.1	69
Pocahontas Region:												
Chesapeake & Ohio 1935	3,061	788,119	833,121	36,112	31,930	55.5	2,716,984	1,463,058	432	98	18.5	127
1934	3,106	777,920	825,350	35,240	31,078	54.0	2,658,831	1,409,899	453	121	21.0	145
Norfolk & Western 1935	2,160	588,118	617,502	30,511	22,104	58.8	1,815,411	946,741	349	34	8.9	121
1934	2,164	551,166	575,121	28,226	19,911	58.2	1,652,353	830,653	416	55	11.5	196
Southern Region:												
Atlantic Coast Line 1935	5,148	516,671	518,111	6,767	10,272	61.7	550,794	185,779	303	153	33.6	61
1934	5,145	602,316	604,085	6,993	12,020	59.4	670,824	227,739	345	134	27.9	102
Central of Georgia 1935	1,886	217,670	218,574	3,696	4,577	72.3	245,122	95,697	96	46	32.7	1
1934	1,886	199,654	200,257	3,074	4,287	68.8	232,776	86,846	103	37	26.8	..
Illinois Central (incl. Y. & M. V.) 1935	6,579	1,415,620	1,422,953	27,946	31,683	61.6	2,117,967	903,489	605	320	34.6	4
1934	6,640	1,291,739	1,307,750	24,067	28,255	58.9	1,901,860	769,851	597	332	35.7	10
Louisville & Nashville 1935	5,049	993,134	1,071,805	29,395	21,447	59.9	1,506,119	726,492	334	255	43.4	11
1934	5,067	935,760	984,808	23,343	19,597	59.0	1,353,815	630,957	332	303	47.7	31
Seaboard Air Line 1935	4,295	443,085	447,924	3,696	9,976	63.9	577,052	202,930	183	90	33.0	8
1934	4,298	505,613	516,250	4,710	11,666	61.4	704,069	238,236	208	81	28.0	6
Southern 1935	6,599	1,085,959	1,101,367	18,513	23,917	65.4	1,351,067	522,941	562	287	33.7	90
1934	6,599	1,068,923	1,083,174	18,881	23,564	65.3	1,325,027	506,929	638	275	30.1	155
Northwestern Region:												
Chicago & North Western 1935	8,428	902,822	962,907	26,466	21,031	62.0	1,313,440	451,742	540	287	34.6	138
1934	8,443	946,890	996,330	21,829	22,360	61.2	1,374,744	491,930	577	240	29.4	154
Chicago Great Western 1935	1,456	225,081	225,701	7,669	6,009	62.0	374,209	139,239	59	38	39.2	1
1934	1,463	210,715	213,878	16,693	6,078	59.2	378,686	130,142	64	36	36.4	2
Chi., Milw., St. P. & Pacific 1935	11,152	1,214,114	1,286,399	65,353	28,289	59.4	1,831,389	731,018	498	187	27.3	119
1934	11,193	1,126,123	1,194,534	54,488	27,510	59.6	1,778,496	713,145	576	304	34.6	218
Chi., St. P., Minneap. & Omaha 1935	1,644	220,444	231,517	12,881	4,103	61.7	261,749	106,669	114	43	27.4	45
1934	1,653	208,068	215,361	10,342	4,293	63.6	265,175	89,196	125	33	21.2	58
Great Northern 1935	8,302	703,474	709,820	22,112	18,472	64.3	1,145,326	468,501	427	169	28.3	88
1934	8,336	596,582	601,376	18,261	16,008	64.8	1,004,451	414,849	440	165	27.3	115
Minneap., St. P. & S. St. M. 1935	4,274	355,779	361,570	2,634	6,461	62.4	372,744	145,236	111	43	28.2	..
1934	4,281	331,605	335,412	2,407	6,452	63.7	378,168	154,288	118	44	26.9	9
Northern Pacific 1935	6,416	574,777	626,192	40,188	15,803	67.5	932,262	387,939	346	103	23.0	19
1934	6,410	502,504	543,354	35,327	13,878	67.0	819,531	348,492	368	149	28.8	43
Oreg.-Wash. R. R. & Nav. 1935	2,120	164,872	173,980	11,855	3,725	67.3	218,410	85,860	89	39	30.5	21
1934	2,111	148,739	154,019	9,218	3,495	63.3	214,202	83,963	72	49	40.8	11
Central Western Region:												
Alton 1935	921	177,591	181,329	2,193	3,672	57.4	245,324	82,081	47	42	47.2	4
1934	923	173,857	176,519	1,827	3,392	60.7	215,818	77,996	37	56	59.8	3
Atch., Top. & S. Fe (incl. G.C.& S.F. and P.& S.F.) 1935	13,324	1,555,600	1,631,480	62,149	41,042	64.0	2,435,151	807,886	653	353	35.1	168
1934	13,335	1,380,925	1,423,281	46,129	34,010	63.4	2,035,875	699,645	706	343	32.7	250
Chi., Burlington & Quincy 1935	8,971	1,179,905	1,237,270	40,344	27,899	61.0	1,703,567	720,459	478	102	17.6	7
1934	9,097	1,109,668	1,144,976	33,609	26,966	59.6	1,646,031	674,604	429	126	22.7	8
Chi., Rock Island & Pac. (incl. Chi., R. I. & Gulf) 1934	8,298	1,023,493	1,042,883	5,596	21,303	60.3	1,300,522	457,999	429	238	35.7	87
	8,332	992,692	1,008,318	6,197	21,190	61.1	1,279,100	460,989	442	149	25.2	112
Denver & Rio Grande Wn. 1935	2,635	212,775	234,060	25,778	5,543	64.6	338,216	139,182	167	51	23.4	18
1934	2,469	186,680	205,477	22,248	5,167	64.3	310,568	123,445	177	54	23.4	36
Los Angeles & Salt Lake 1935	1,225	162,350	183,819	26,843	4,694	61.9	282,268	101,251	74	22	22.9	9
1934	1,232	165,832	188,637	25,961	4,705	61.4	279,138	100,581	66	30	30.8	6
Oregon Short Line 1935	2,475	280,964	294,913	21,527	7,244	61.1	454,652	169,535	124	47	27.4	30
1934	2,460	249,976	258,518	14,668	6,452	60.2	402,688	141,357	133	49	26.9	33
Southern Pac.—Pac. Lines 1935	8,589	1,031,381	1,107,954	107,829	32,515	62.7	1,974,683	640,581	516	260	33.5	176
1934	8,718	949,721	1,011,132	100,980	29,270	64.5	1,736,821	573,445	505	349	40.8	186
Union Pacific 1935	3,630	891,354	910,382	34,567	27,358	64.4	1,618,289	570,721	294	113	27.9	69
1934	3,768	812,102	830,803	35,896	27,153	60.7	1,645,754	549,532	317	116	26.9	99
Southwestern Region:												
Mo.-Kans.-Texas Lines 1935	3,282	342,933	345,347	4,771	8,508	61.5	513,984	177,848	113	81	41.6	31
1934	3,282	366,251	368,501	5,131	9,096	60.1	555,293	198,125	159	74	31.6	71
Missouri Pacific 1935	7,208	1,110,230	1,143,635	26,649	27,689	59.7	1,802,724	657,642	398	168	29.6	121
1934	7,333	1,071,055	1,095,110	24,398	27,528	60.1	1,764,259	644,334	407	161	28.4	133
St. Louis-San Francisco 1935	4,999	611,005	615,854	7,791	12,526	62.9	752,183	291,270	376	85	18.4	140
1934	5,173	617,674	623,020	6,559	13,217	61.6	815,436	319,593	400	81	16.8	160
St. Louis-Sthwstrn. Lines 1935	1,774	243,416	247,967	3,309	6,444	65.4	361,393	123,626	96	26	21.1	19
1934	1,872	212,851	228,586	2,872	5,322	62.5	306,725	98,699	98	35	26.6	12
Texas & New Orleans 1935	4,430	489,578	489,620	8,453	11,337	65.8	660,286	233,530	244	53	17.9	73
1934	4,464	483,803	484,364	4,978	10,395	61.8	622,084	204,381	222	80	26.5	52
Texas & Pacific 1935	1,945	248,100	248,100	1,977	7,282	59.5	449,059	143,114	149	77	33.9	73
1934	1,946	242,171	242,171	1,768	6,975	59.0	437,654	144,407	165	70	29.7	87

Compiled by the Bureau of Statistics, Interstate Commerce Commission. Subject to revision.

1935, Compared with January, 1934, for Roads with Annual Operating Revenues Above $25,000,000

Region, road, and year	Average number of freight cars on line: Home	Foreign	Total	Per cent unserviceable	Gross ton-miles per train-hour, excluding locomotives and tenders	Gross ton-miles per train-mile, excluding locomotives and tenders	Net ton-miles per train-mile	Net ton-miles per loaded car-mile	Net ton-miles per car-day	Car-miles per car-day	Net ton-miles per mile of road per day	Pounds of coal per 1,000 gross ton-miles, including locomotives and tenders	Locomotive-miles per locomotive-day
New England Region:													
Boston & Albany.....1935	2,885	3,841	6,726	25.2	18,989	1,129	407	18.9	266	20.1	4,463	186	51.4
1934	3,351	3,721	7,072	25.6	20,606	1,213	413	18.1	266	22.3	4,675	173	48.9
Boston & Maine.....1935	8,553	7,364	15,917	14.1	22,191	1,701	650	21.2	366	25.1	2,891	131	40.4
1934	8,945	7,877	16,822	15.2	25,318	1,811	674	21.6	371	26.7	3,028	119	40.1
N. Y., New Hav. & Hartf..1935	15,487	11,202	26,689	13.9	22,751	1,620	627	21.3	263	18.5	3,435	129	40.6
1934	15,572	11,306	26,878	11.6	25,750	1,744	658	21.9	286	21.1	3,759	120	41.8
Great Lakes Region:													
Delaware & Hudson.....1935	9,910	2,769	12,679	4.6	26,428	2,050	967	30.8	536	28.3	8,136	125	38.3
1934	10,591	2,765	13,356	4.5	25,816	2,048	958	31.4	529	28.5	8,331	122	39.6
Del., Lack. & Western.....1935	16,280	4,507	20,787	12.4	29,496	1,820	738	24.3	410	25.8	8,589	163	53.6
1934	16,521	4,468	20,989	11.1	25,567	1,758	690	23.9	383	25.6	8,050	167	56.5
Erie (incl. Chi. & Erie)....1935	24,442	13,199	37,641	6.2	39,527	2,442	967	24.3	538	34.3	8,788	113	48.8
1934	31,282	13,575	44,857	5.8	39,108	2,462	949	24.0	427	28.7	8,268	113	46.3
Grand Trunk Western.....1935	5,226	8,086	13,312	14.8	28,645	1,594	558	21.2	291	22.3	3,842	115	49.9
1934	5,790	7,891	13,681	18.8	27,520	1,484	514	21.1	247	19.3	3,350	115	44.5
Lehigh Valley 1935	15,459	6,581	22,040	17.0	30,525	1,858	790	26.6	444	25.4	7,335	157	46.3
1934	17,920	5,993	23,913	21.5	30,999	1,809	747	26.5	402	24.7	7,200	151	46.9
Michigan Central 1935	18,042	20,996	39,038	13.1	33,905	1,904	607	19.4	219	19.1	4,353	101	82.0
1934	21,471	19,126	40,597	10.8	34,413	1,851	616	20.0	184	15.5	3,803	120	67.7
New York Central.....1935	49,381	55,694	105,075	23.1	33,766	2,170	926	27.9	421	24.9	6,924	116	55.2
1934	64,853	56,054	120,907	25.0	35,318	2,278	938	27.0	364	23.3	6,859	112	46.8
New York, Chi. & St. L...1935	9,189	6,614	15,803	4.3	34,093	1,907	725	22.9	668	46.0	6,361	105	83.3
1934	9,075	6,598	15,673	4.0	31,221	1,778	639	22.1	634	48.2	5,981	110	85.4
Pere Marquette 1935	11,627	5,619	17,246	3.5	26,021	1,586	603	24.7	384	26.1	3,161	110	75.8
1934	13,369	5,181	18,550	2.8	26,431	1,535	581	24.4	353	24.8	3,078	102	72.4
Pittsburgh & Lake Erie....1935	16,242	9,374	25,616	51.3	42,867	3,255	1,750	45.1	142	5.5	15,518	115	30.4
1934	16,713	10,469	27,182	32.1	45,923	3,285	1,747	46.6	121	4.8	14,101	110	28.4
Wabash 1935	13,302	8,642	21,944	3.9	34,617	1,710	572	20.2	470	38.3	4,239	131	57.1
1934	15,150	7,880	23,030	3.4	34,815	1,712	561	19.3	406	34.2	3,823	125	50.8
Central Eastern Region:													
Baltimore & Ohio.....1935	76,652	18,445	95,097	19.2	24,679	1,923	870	31.2	386	20.3	5,814	166	43.6
1934	83,386	17,486	100,872	18.8	24,844	1,941	854	30.8	346	19.3	5,576	170	41.9
Big Four Lines.....1935	13,765	22,860	36,625	15.3	31,771	1,870	855	30.4	455	24.5	6,280	123	60.3
1934	18,161	22,282	40,443	15.5	31,671	1,836	805	28.6	365	21.3	5,555	126	56.2
Central of New Jersey.....1935	14,535	8,950	23,485	30.6	27,298	2,355	1,162	35.5	228	10.9	7,785	151	38.2
1934	16,714	7,222	23,936	35.3	27,637	2,329	1,121	35.5	222	11.2	7,689	144	36.0
Chicago & Eastern Illinois..1935	3,789	2,515	6,304	12.4	26,969	1,507	673	31.1	621	32.6	4,167	136	55.7
1934	5,595	2,398	7,993	23.4	25,372	1,437	603	29.5	422	25.0	3,594	136	33.2
Elgin, Joliet & Eastern.....1935	8,357	2,813	11,170	15.0	15,462	1,796	889	40.0	231	10.0	5,771	143	34.3
1934	9,496	4,082	13,578	18.7	14,887	1,662	801	38.5	145	6.6	4,424	139	28.7
Long Island 1935	773	3,793	4,566	3.4	5,545	694	289	32.8	65	3.7	757	363	25.1
1934	778	3,247	4,025	2.0	5,874	752	309	31.5	77	4.6	780	302	26.5
Pennsylvania System 1935	239,143	43,811	282,954	13.9	31,377	2,263	1,015	30.5	300	16.0	8,467	137	42.8
1934	242,732	42,575	285,307	12.6	31,401	2,197	962	29.8	283	15.9	8,001	140	42.7
Reading 1935	32,749	8,656	41,405	7.7	24,068	1,964	966	36.2	312	14.4	8,897	170	44.7
1934	35,333	8,112	43,445	19.2	24,518	2,030	985	37.5	325	15.4	9,720	158	45.1
Pocahontas Region:													
Chesapeake & Ohio.....1935	42,828	7,463	50,291	1.7	46,983	3,447	1,856	45.8	938	36.9	15,417	87	52.9
1934	43,080	7,543	50,623	1.8	46,331	3,418	1,812	45.4	898	36.7	14,643	88	48.4
Norfolk & Western.....1935	35,930	3,689	39,619	2.7	45,947	3,087	1,610	42.8	771	30.6	14,139	114	54.6
1934	39,482	3,693	43,175	3.4	44,322	2,998	1,507	41.7	621	25.5	12,382	117	41.4
Southern Region:													
Atlantic Coast Line.....1935	26,558	7,426	33,984	15.2	18,412	1,066	360	18.1	176	15.8	1,164	125	37.2
1934	27,487	6,125	33,612	24.7	19,312	1,114	378	18.9	219	19.4	1,428	122	41.2
Central of Georgia.....1935	7,070	1,883	8,953	27.2	20,881	1,126	440	20.9	345	22.8	1,637	135	50.5
1934	7,570	2,219	9,789	24.7	20,737	1,166	435	20.3	286	20.5	1,486	134	46.8
Illinois Central (incl. Y. & M. V.).....1935	43,085	14,037	57,122	33.7	24,623	1,496	638	28.5	510	29.1	4,430	149	50.6
1934	53,221	12,461	65,682	39.4	24,623	1,472	596	27.2	378	23.5	3,740	151	46.3
Louisville & Nashville.....1935	44,639	7,032	51,671	33.0	23,137	1,517	732	33.9	454	22.3	4,641	154	60.3
1934	48,664	6,623	55,287	28.2	22,287	1,447	674	32.2	368	19.4	4,016	149	51.2
Seaboard Air Line.....1935	11,857	5,446	17,303	3.6	21,437	1,302	458	20.3	378	29.1	1,524	133	53.4
1934	12,063	5,371	17,434	6.0	22,673	1,393	471	20.4	441	35.1	1,788	126	58.1
Southern 1935	28,178	13,624	41,802	15.1	20,314	1,244	482	21.9	404	28.2	2,556	160	42.6
1934	32,008	14,870	46,878	18.7	20,200	1,240	474	21.5	349	24.8	2,478	160	38.9
Northwestern Region:													
Chicago & North Western..1935	43,287	20,985	64,272	13.2	21,256	1,455	500	21.5	227	17.0	1,729	157	38.6
1934	44,022	17,136	61,158	9.2	22,277	1,452	520	22.0	259	19.2	1,880	144	40.1
Chicago Great Western.....1935	2,988	3,007	5,995	3.7	28,981	1,663	619	23.2	749	52.2	3,085	153	77.4
1934	3,399	2,643	6,042	6.3	32,450	1,797	618	21.4	695	54.8	2,870	152	74.5
Chi., Milw., St. P. & Pacific.1935	52,246	15,394	67,640	3.3	23,396	1,508	602	25.8	349	22.7	2,114	147	63.7
1934	58,982	13,802	72,784	4.4	24,179	1,579	633	25.9	316	20.5	2,055	134	45.8
Chi., St. P., Minneap. & Omaha 1935	2,107	7,178	9,285	11.4	15,185	1,187	484	26.0	371	23.1	2,093	150	50.1
1934	2,381	7,110	9,491	10.6	18,711	1,274	429	20.8	303	23.0	1,741	129	46.0
Great Northern 1935	42,624	9,347	51,971	6.6	23,632	1,628	666	25.4	291	17.8	1,820	161	39.6
1934	43,603	9,371	52,974	6.2	24,729	1,684	695	25.9	253	15.1	1,605	147	33.0
Minneap., St. P. & S. St. M.1935	14,365	3,311	17,676	5.5	15,491	1,048	408	22.5	266	18.9	1,096	144	76.3
1934	16,342	3,007	19,349	5.6	17,505	1,140	465	23.9	258	16.9	1,163	126	67.3
Northern Pacific 1935	35,028	4,696	39,724	10.5	24,099	1,622	675	24.5	315	19.0	1,950	189	47.9
1934	41,938	4,199	46,137	11.7	23,973	1,631	694	25.1	244	14.5	1,754	170	36.1
Oreg.-Wash. R. R. & Nav..1935	7,221	1,717	8,938	6.2	22,050	1,325	521	23.0	310	20.0	1,306	174	46.7
1934	8,598	1,743	10,341	4.9	21,672	1,440	564	24.0	262	17.2	1,283	147	43.7
Central Western Region:													
Alton 1935	3,193	5,942	9,135	27.6	30,858	1,381	462	22.4	290	22.6	2,874	137	66.5
1934	3,139	5,284	8,423	22.4	25,653	1,241	449	23.0	299	21.4	2,727	146	61.9
Atch., Top. & S. Fe (incl. G.C.& S.F. and P.& S.F.).1934	77,268	9,946	87,214	12.5	29,371	1,565	519	19.7	299	23.7	1,956	135	54.3
	80,640	9,827	90,467	11.8	27,301	1,474	507	20.6	249	19.1	1,693	120	45.2
Chi., Burlington & Quincy..1935	33,987	11,840	45,827	8.9	25,794	1,444	611	25.8	507	32.2	2,591	141	71.1
1934	39,819	11,590	51,409	7.9	26,054	1,483	608	25.0	423	28.4	2,392	133	68.5
Chi., Rock Island & Pac. (incl. Chi., R. I. & Gulf).1935	29,726	10,698	40,424	21.7	22,066	1,271	447	21.5	365	28.2	1,780	159	50.7
1934	35,791	9,846	45,637	22.3	22,398	1,289	464	21.8	326	24.5	1,785	155	55.3
Denver & Rio Grande Wn..1935	12,924	2,841	15,765	6.3	23,754	1,590	654	25.1	285	17.6	1,704	176	38.5
1934	13,798	2,823	16,621	5.4	24,452	1,664	661	23.9	240	15.6	1,613	181	31.9
Los Angeles & Salt Lake...1935	4,802	1,078	5,880	9.5	30,775	1,739	624	21.6	555	41.6	2,666	146	70.8
1934	4,733	1,070	5,803	11.0	29,223	1,683	607	21.4	559	42.6	2,634	145	72.3
Oregon Short Line.....1935	8,887	4,820	13,707	21.8	27,680	1,618	603	23.4	399	27.9	2,210	133	59.9
1934	8,923	4,475	13,398	16.2	26,584	1,611	565	21.9	340	25.8	1,853	128	48.5
Southern Pac.—Pac. Lines..1935	34,931	21,279	56,210	10.3	31,230	1,915	621	19.7	368	29.8	2,406	114	50.5
1934	38,899	21,363	60,262	12.3	29,741	1,829	604	19.6	307	24.3	2,122	115	42.0
Union Pacific 1935	24,011	7,944	31,955	17.3	43,778	1,816	640	20.9	576	42.9	5,072	126	74.8
1934	24,245	7,888	32,133	19.6	45,379	2,027	677	20.2	552	44.9	4,705	122	64.6
Southwestern Region:													
Mo.-Kans.-Texas Lines 1935	5,818	3,199	9,017	3.3	27,215	1,499	519	20.9	636	49.5	1,748	99	58.2
1934	9,305	2,626	11,931	8.8	26,908	1,516	541	21.8	536	40.9	1,947	99	51.8
Missouri Pacific 1935	19,272	18,010	37,282	4.0	29,360	1,624	592	23.8	569	40.1	2,943	137	66.7
1934	23,142	15,819	38,961	7.9	29,421	1,647	602	23.4	533	37.9	2,834	134	63.6
St. Louis-San Francisco....1935	22,514	4,281	26,795	7.9	22,434	1,231	477	23.3	351	24.0	1,879	148	43.6
1934	23,034	4,548	27,582	6.5	22,827	1,320	517	24.2	374	25.1	1,993	145	42.2
St. Louis-Sthwstrn. Lines..1935	3,476	2,562	6,038	7.4	27,615	1,485	508	19.2	660	52.6	2,248	106	66.5
1934	4,690	2,573	7,263	9.5	25,241	1,441	464	18.5	438	37.8	1,701	109	55.9
Texas & New Orleans.....1935	7,771	10,917	18,688	7.4	24,196	1,349	477	20.6	403	29.7	1,701	97	54.2
1934	8,558	10,939	19,497	5.8	22,131	1,286	422	19.7	338	27.8	1,477	100	52.3
Texas & Pacific.....1935	3,392	4,456	7,848	5.5	29,148	1,810	577	19.7	588	50.3	2,373	93	35.7
1934	3,411	4,692	8,103	6.7	27,125	1,807	596	20.7	575	47.0	2,394	89	33.4

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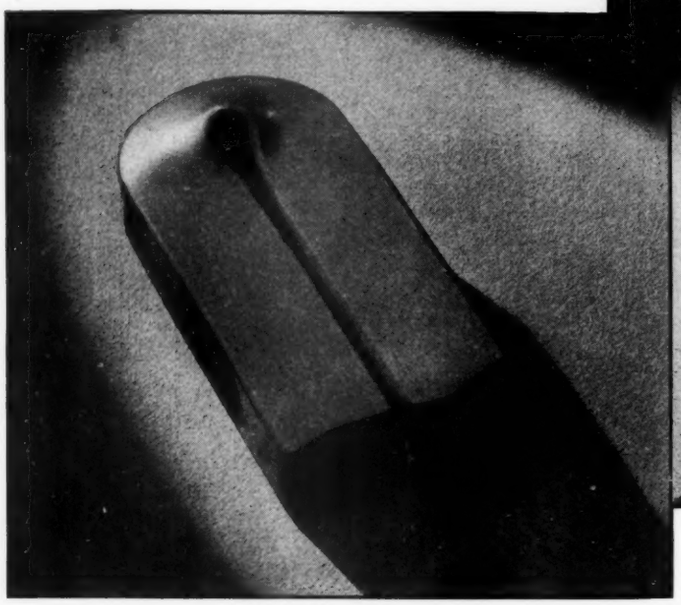
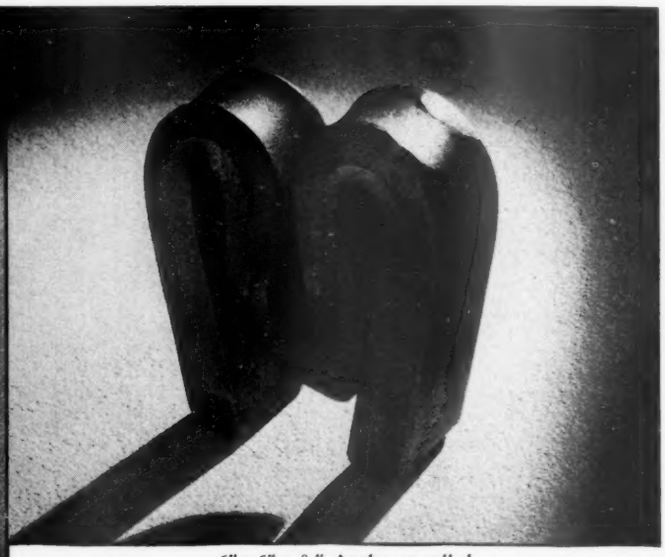


1½" Thick Plate; as rolled

Physical Characteristics

Test	*Yield Point*	*Tensile Strength*	*Elongation in 8"*	*Reduction of Area*
Longitudinal	61,650	82,700	32.5%	73.0%
Transverse	61,000	81,700	31.0%	65.5%



6" x 6" x $\frac{9}{16}$" Angle; as rolled

Physical Characteristics

Test	*Yield Point*	*Tensile Strength*	*Elongation in 8"*	*Reduction of Area*
Edge	67,300	85,250	21.9%	68.2%
Corner	67,050	89,700	19.4%	61.9%

Like all Vanadium Steels, the recently developed Manganese-Vanadium type of low vanadium and carbon content combines high strength with great toughness. Note the cold bend tests illustrated above. A 6" x 6" x $\frac{9}{16}$" angle with two 180° bends . . . a 1½" plate bent flat . . . neither specimen showing any sign of fracture. Manganese-Vanadium is a tough, high strength steel, developed particularly for structural applications. It permits material weight-savings.

Another desirable feature of Manganese-Vanadium Steel is its fine welding qualities. Unlike most high strength steels, its qualities are practically unaffected by welding heat.

If you are seeking high strength and toughness with good welding qualities, it will pay you to investigate the advantages of Manganese-Vanadium Steel. Our Metallurgical Engineers have interesting data.

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